Paper
TRADE JOURNAL

AUGUST 24, 1950

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G

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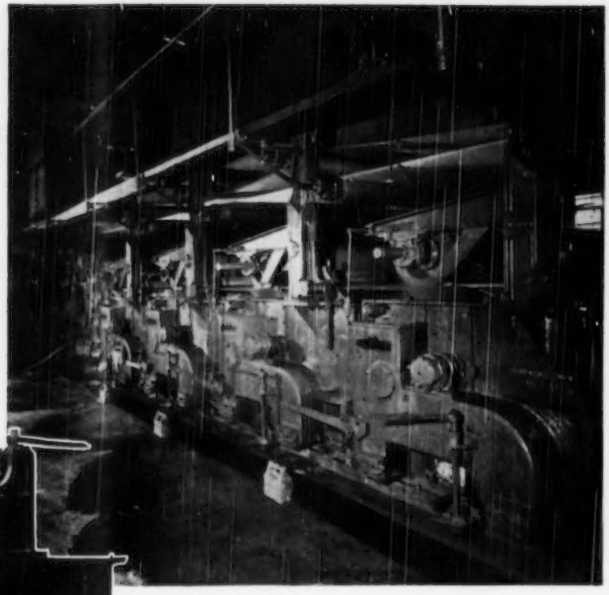

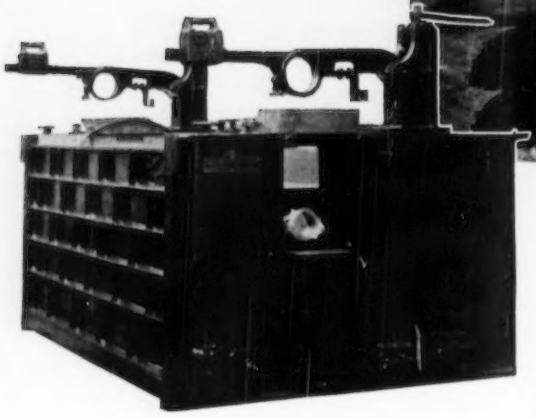

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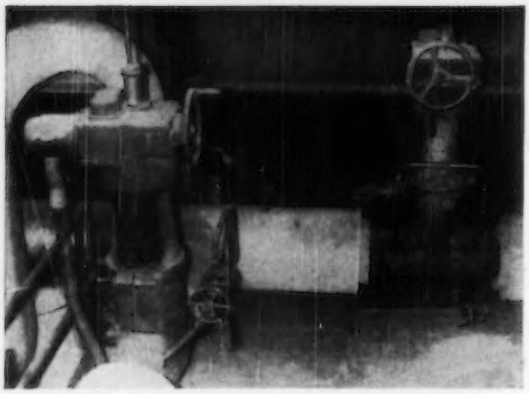
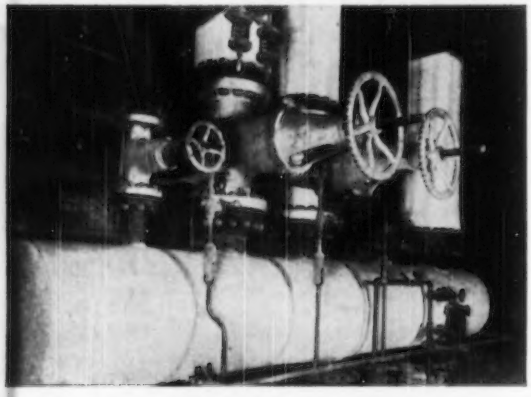
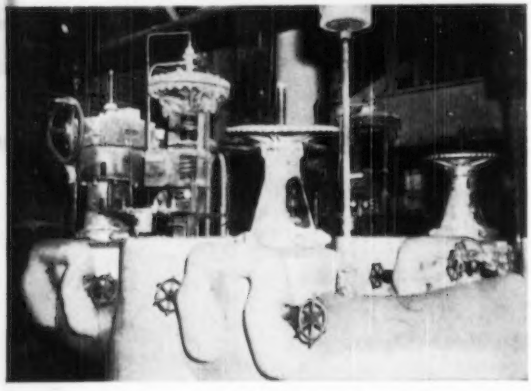


Walworth Motor Operated Series 900 Pressure-Seal Cast Steel Gate Valves.



Walworth Series 600 Pressure-Seal Cast Steel Gate Valves.



Manually operated and motor operated Walworth Series 900 Pressure-Seal Cast Steel Gate Valves.

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The bonnet and body design of Walworth Pressure-Seal Valves is such that the pressure within the valve is used to prevent leakage at the junction of the bonnet and body. Sudden temperature and pressure changes do not affect this tightness. Bonnet flanges and studs are eliminated and the weight of the valve is reduced.

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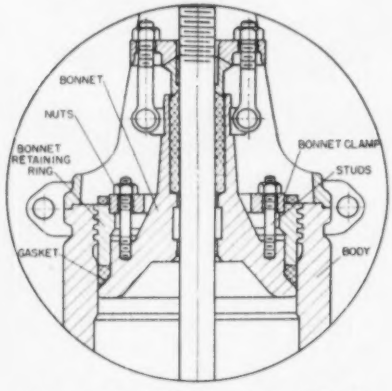

A cross section of the bonnet joint assembly of a Walworth Pressure-Seal Cast Steel Gate Valve. The internal pressure is utilized to make the body-to-bonnet joint tight.

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DATES TO REMEMBER

SEPTEMBER 5-9: Sixth National Chemical Exposition, Chicago Section, American Chemical Society, Chicago Coliseum, Chicago, Ill.

SEPTEMBER 11-23: 6th Educational Graphic Arts Exposition, International Amphitheatre, Chicago, Ill.

SEPTEMBER 14-16: Southern Paper Trade Assn., Sheraton Plaza Hotel, Daytona Beach, Florida.

SEPTEMBER 14-17: American Pulp & Paper Mills Supts. (New York-Canadian Div.) Convention, Chateau Laurier Hotel, Ottawa, Ont., Canada.

OCTOBER 2-5: Fifth Engineering Conference of the Pulp and Paper Industry, Netherland Plaza Hotel, Cincinnati, Ohio.

OCTOBER 11-13: Fifth Annual Symposium on "Instrumentation for the Process Industries." Agricultural and Mechanical College of Texas, College Station, Texas.

OCTOBER 12-14: American Pulp & Paper Mills Supts. (Southern and Southeastern Div.) Annual Meeting, George Vanderbilt Hotel, Asheville, N. C.

OCTOBER 16-20: 38th Safety Congress and Exposition, Chicago, Ill.

OCTOBER 23-25: National Paper Trade Assn., Fall Convention, Stevens Hotel, Chicago, Ill.

OCTOBER 30-31 NOVEMBER 1: 37th National Foreign Trade Convention, The Waldorf-Astoria, New York, N. Y.

NOVEMBER 27:—DECEMBER 2: 19th National Exposition of Power and Mechanical Engineering, Grand Central Palace, N. Y.

DECEMBER 3-6: American Institute of Chemical Engineers, Annual Meeting, Neal House, Columbus, Ohio.

THIS WEEK

Maintenance Painting Specifications by L. S. Oyster, provides a comprehensive summary of painting requirements for all types of machinery and buildings in the Pulp and Paper Industry.

Methods of waterproofing completed packages are described in the article by William Rabak, entitled "Protective Packaging with Molten Thermoplastics.

NEXT WEEK

Technical Knowledge Is Not Enough by James D. Cunningham.

Taylor, Stiles & Co. — Cutting Machine Specialtists To The Paper Industry.

Rotary Screen for Laboratory Separation of Shives from Mechanically Prepared Wood Pulp by J. W. Greider, R. A. MacArthur and L. C. Gischig.

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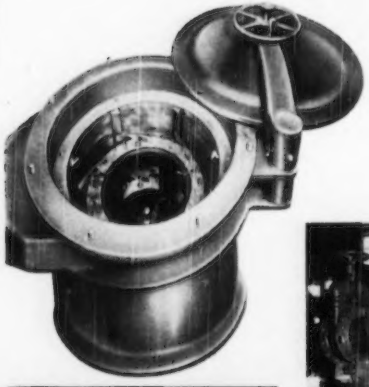
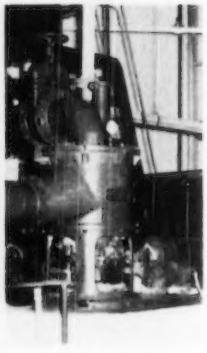
SELECTIFIER SCREENS vs FLAT SCREENS



Are you alert to the superiority of a Selectifier Screen over the conventional flat screen? If not, here is a "quickie" on the subject.



- Totally-enclosed.
- Operates under pressure.
- Performs final cleaning operation.
- Requires little floor room.
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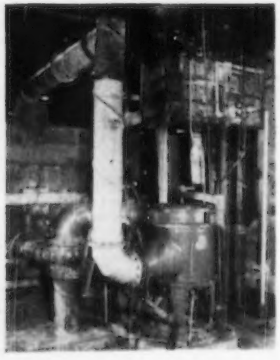
- Cost in line with flat screen costs. Already in service in mills running

Calender, index	Boxboard liner	Crepe Wadding
Colored specialties	Jute liner	Groundwood
Blotting	Food boards	Glassine
Catalog	Straw, chip	Greaseproof
Boxboard filler	Toweling, Facial	Butcher wrap

Here is something that rates the consideration of every Superintendent, particularly those who would like to get clear away from flat screens. Write Shartle.



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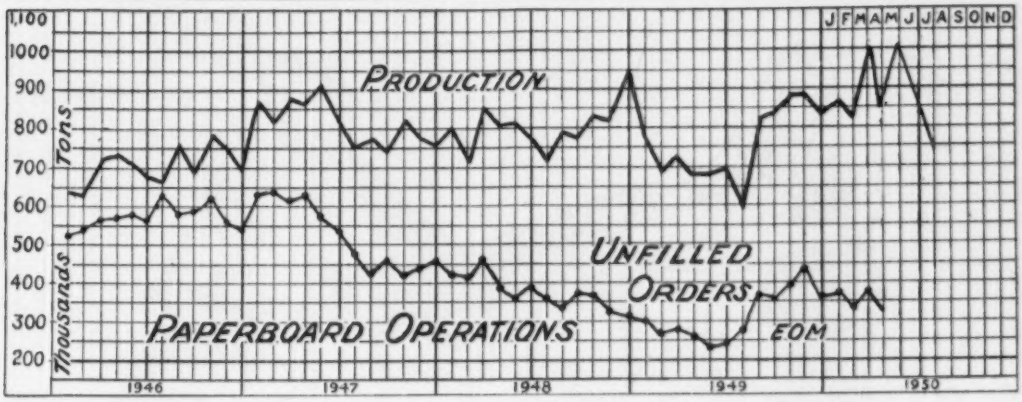
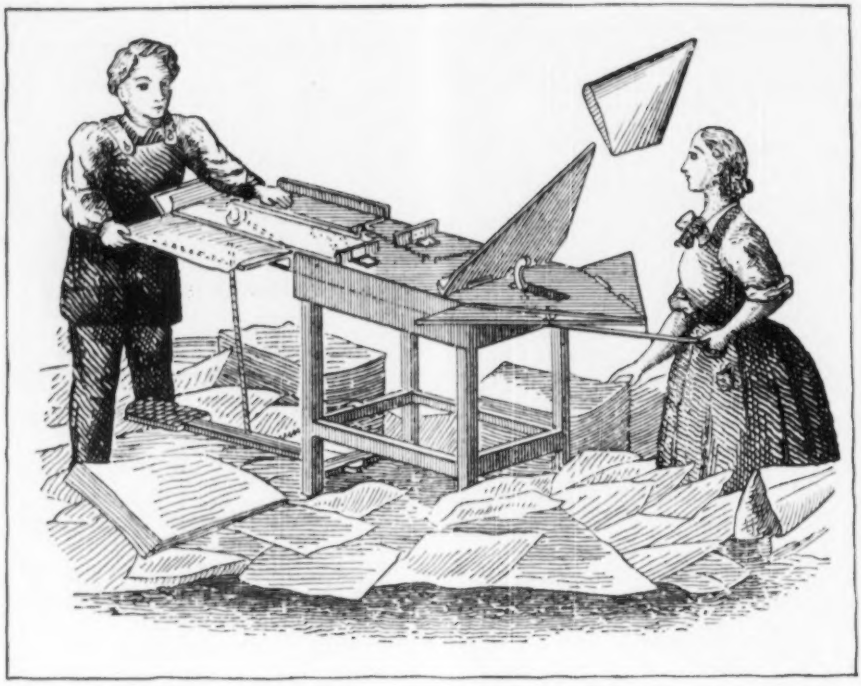
OUR BUSINESS



Source	Production	WEEK ENDING Aug. 12, '50	July 15, '50	Aug. 13, '49
APPA	Paper Production percent 6-day Capacity	105.0	99.1	85.9
	Unbl. Kraft Paper Production percent	97.4	89.1	66.1
NPA	Paperboard Operating Ratio percent inch hours	99.0	82.0	84.0
		June 1950	**May 1950**	**June 1949**
APPA	Paper Production* (Except Newsprint and Building Papers) ....Tons	788,500	842,500	631,906
	New Orders ....Tons	812,800	836,000	637,622
	Unfilled Orders ....Tons	565,565	835,065	343,370
	Shipments ....Tons	786,300	842,000	626,312
		July 1950	**June 1950**	**July 1949**
NPA	Paperboard Production ....Tons	745,255	846,030	583,800
	New Orders ....Tons	890,890	855,016	618,100
	Unfilled Orders ....Tons	524,391	394,110	268,500
	Our Customers Activities Index[1]	**Latest Mo.°**	**Previous Mo.°**	**Year Ago°**
FRS	Manufactures Total Index	202	197	179
	Durable Mfg. Index	229	221	202
	Nondurable Mfg. Index	180	178	160
	Chemical Products Index	254	253	233
	Mfg. Food Products Index	157	150	156
	Printing and Publishing Index	169	174	158
ODC	Magazine Advg.-Printer's Ink Index	324	327	338
	Retail Sales Combined Adjusted Index	312.6	309.4	308.4
	Drug Index	215.9	224.6	225.2
	General Merchandise Group Index	301.2	293.0	303.4
	Grocery and Combination Index	379.1	378.8	368.7
	Prices Index			
BLS	Consumers Price Index[1]	168.6	167.3	169.2
	Wholesale all Commodities[2]	155.9	152.9	155.7
	Wholesale Foods[2]	159.9	155.3	163.8
	Commodities other than Farm Products and Foods[2]	147.6	146.4	146.8
	Wholesale Pulp and Paper[2]	155.4	155.4	163.3
	Purchasing Power of Dollar, Consumers Prices[1]	59.3	59.8	59.1
	General Activity Index			
FRS	Mfg. Production-Worker Payroll	337.1	333.3	319.2
	Unemployment Compensation Initial Claims (M)	1,367	1,543	1,662
	Miscellaneous Carloadings–Thousands of Cars	1,424	1,434	1,350
	Electric Output (Million KW hr.)	31,486	30,191	27,875
PTJ	Average 32 P & P Common Stocks as of August 15	$31.64	$29.92	$26.76
	Average Indicated Dividends Common Stocks as of August 15	$ 2.32	$ 2.32	$ 2.23

[1] 1935–39=100 Unadjusted Index
[2] 1926=100
* For details see APPA Monthly Statistical Summary—June 1950 Estimated Figures
° Latest Month Available on Request



Hand-Operated Bag Machine, about 1845. Illustration from the Bettmann Archive

The Bag Business is Big Business

One hundred sixty years ago, inventors were trying to devise a machine that would shape and fasten a piece of paper to form a paper bag. Hand-operated machines were built about 1835. Then in 1852 Francis Wolle, of Bethlehem, Pennsylvania, patented the first automatic bag-making machine. In 1858 he produced an improved machine which made bags from a running roll of paper, cutting, folding, and pasting in a continuous series of operations. Great modern machines now turn out millions of bags a day, serving the infinite packaging needs of business. Working their miracles, they form every type and size of bag from tiny glassine containers to giant lined bags that hold and protect precious chemicals. So great is the volume that manufacturers of bags and shipping sacks use more than one million tons of paper each year and play an important part in America's great pulp and paper industry.

The dramatic story of paper is told in the sound-and-color film, "Paper — Pacemaker of Progress," and in a book under the same title. Both are presented by F. C. Huyck & Sons as a tribute to the Paper Industry. The book will be sent free upon request.

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Paper TRADE JOURNAL

TRENDS

Office of the PAPER TRADE JOURNAL,
Wednesday, August 23, 1950.

Though general market reports point to a gradual decline in abnormal buying during the latest week, the paper and board markets are no easier. From raw materials to the converted item, the industry is under terrific pressure to meet the swollen demand.

Inventories Now Rebuilding

Trade spokesmen believe that scare and speculative buying do not now constitute the major pressure of the volume buying; that phase appears to have passed. Rather, the long-delayed inventory building has gotten underway as a result of the upturn in prices. It is reasoned that at the low profit level at which paper merchants have been operating — a condition forced on them by cut-price competitive conditions of the buyer's market and direct mill distribution—inventory risk could not readily be absorbed. Now that the trend is unmistakable, rebuilding of stocks to normal levels is indicated.

Has Direct Distribution Backfired?

At the mill selling end, there is said to be awful confusion over the flood of volume orders. Production, with few exceptions, was at full capacity rate in June — before the Korean Incident. Thus there is no hope of stepping it up to meet the amassing demand. The tonnage orders become just an enormous backlog against which the mills must work in the months ahead. In many cases, allotments are already being made to their regular distributors.

Mills which have been selling direct to consumer are now under double pressure: to rebuild stocks of their distributors as well as those of publishers.

A Strong Seller's Market

Though possibly freighted with responsibilities to national mobilization and anxieties about raw material supplies, the future for Fall and winter paper and board markets is very bright. A strong seller's market has returned.

Fine Papers.— Price rises on sulfite bonds and ledgers which started in early August now appear to be fairly general. Several other mills have announced similar rises, to be effective immediately. Far from retarding the flow of orders, as was recently reported in the daily press, this additional sign of market price strength brought in more orders for inventory replacements.

Justification for another rise in rag content papers is seen in the costs of cottons and spot wood pulp tonnages, particularly at mills which have had to come into the spot market to expand production.

Coarse Papers.— Temporarily, at least, the wrappings market is in an order-taking period; jobbers are not seeking business. Heavy retail buying of nondurables and durables has eaten up consumer stocks of all types of wrappings: tissues, sulfite and kraft wrapping papers, container boards of all types, etc. Demand for immediate replacements is hectic, dealers report, as they speak of manufacturers holding up production lines for want of wrappings, and of being obliged to buy at premium prices to keep their plants in operation.

Kraft wrapping is going to regular accounts on an allotment basis, it is said. The jobbers are trying to take care of their customers, who also are in need of stocks for normal demand and Christmas trade. What little kraft wrapping is about the market is said to be in the hands of speculators or on a gray market basis.

Paperboards.— Though deluged with orders which will take months for some mills to fill, raw materials supply and cost is the chief headache for container and board mills. Waste paper prices are not only at nominal levels, but supplies are inadequate.

Wastepaper Consumption Soars

Wastepaper consumption in Eastern mills for the week ended August 12 leaped to a high mark for the year, using 9 percent more than in the previous week the Eastern Conservation Committee (ECC) reports. Comparing the week with 1949's week, Eastern mills purchased 35 percent more waste paper and consumed 37 percent more. Dealers supplied 95 percent of mill requirements; the rest was taken from inventory.

Stepped-up summertime collections made it possible for the Eastern mills to put away a few hundred tons of old corrugated boxes and to break even with high grades, says Director Colley S. Baker of the ECC. All inventory losses were of the *mixed* and *news* grades. The mills, however, are quite able to stand substantial inventory losses in *news*. Their supply is almost as great as it was last winter. Aggregate mill inventories of all grades of wastepaper are about 20 percent below those of this date last year, says Mr. Baker for his group.

ECC also reports on the efforts of dealers and packers to augment collections. "Packers were placing advertisements in daily newspapers for waste paper in certain localities, and radio appeals to merchants and business houses offering to purchase *mixed* and corrugated grades were sponsored by dealers supplying mills in Pennsylvania and Virginia," the weekly bulletin states.

N. E. Market Continues Climb

BOSTON — Decidedly upward is the price trend of waste paper in New England. Prices of all grades held firm last week after considerable advances were made the previous week. But No. 1 *mixed* rose $2 per ton to $16/17, and No. 1 *news* went up $4 to $21/22.

A. H. Anderson, president of Bird & Son, said on August 18 that an increased demand by New England mills for the manufacture of paperboard and building materials for both the civilian economy and the military has made it urgent for retail and wholesale merchants throughout this area to collect it and dispose of it promptly to local waste paper dealers.

A greater percentage of the tonnage available for collection and re-use is being destroyed today than at any time since the last war, Mr. Anderson said. He urged that no clean waste paper be destroyed, and called upon merchants to arrange for weekly collections.

In the rag market, new domestic cotton cuttings, old domestic cotton rags, and bagging also are tending upward. As in waste paper, grades held steady last week after previous advances. Foreign gunny went to $5.75/6.00, marked up 50 cents per cwt.; domestic gunny No. 1 moved to $6/6.50, a similar rise of 50 cents.

Few if any shipments of new foreign cotton cuttings or old foreign rags are coming in, according to trade reports here.

WOODPULP: U. S. PRODUCTION CONSUMPTION, INVENTORIES, JUNE, 1950

(Tons of 2,000 pounds)

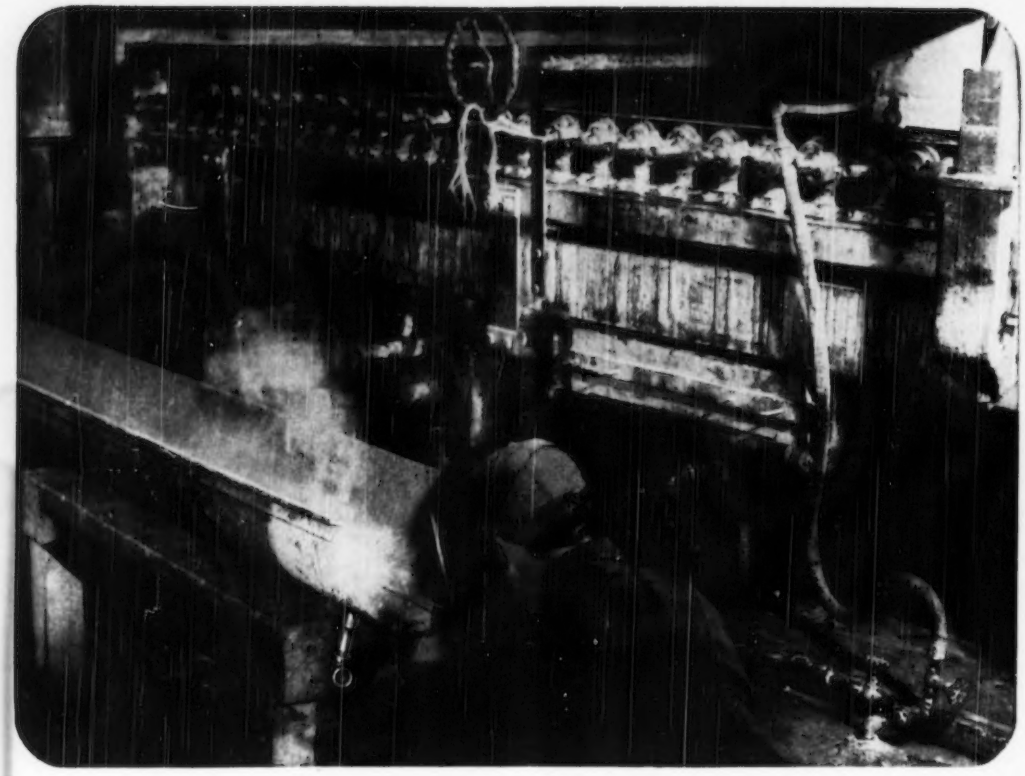
Grade	U. S. Production: Tons	U. S. Production: % of Base	Consumption in paper & board manuf.	End of Month Inventories: At pulp mills, for later sale	At paper & bd. mills: June	At paper & bd. mills: May*
Total	1,226,123	89.6	1,366,300	27,089	402,718	398,112
Sulfite, Total	231,485	83.4	277,328	18,663	201,557	205,936
Blchd, Total	172,385		170,972		88,262	91,009
Dissolving	38,818		2,999		9,799	10,795
Softwood	125,442		157,814		75,452	77,504
Hardwood	8,125		10,159		3,011	2,710
Unblchd.	59,100		106,356		113,295	114,927
Sulfate, Total	621,334	97.1	690,087	1,303	146,664	134,798
Blchd., Total	114,567		148,983		75,413	68,979
Semi-blchd.	33,962		36,443		6,589	6,293
Unblchd.	472,805		504,661		64,662	59,526
Soda	47,727	94.9	50,612	448	13,726	13,582
Groundwood	187,939	80.7	210,978	501	34,970	38,196
All Others	127,051	81.5	137,295	6,174	n.a.	n.a.

Based on Bureau of Census figures. n.a.—not available * Revised

Paperboard Production (Tons)*

	Aug. 12 1950	Aug. 5 1950	Aug. 13 1949
Production	224,414	219,000	181,138
New Orders	237,995	334,123	169,424
Unfilled Orders	646,656	637,177	311,124

Source: NPA.



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News of the Week

Columbia Cellulose Progress

NEW YORK—The new $27 million high alpha cellulose plant of Columbia Cellulose Co., Ltd., near Prince Rupert, B. C., is expected to come into production during the first quarter of 1951.

Having recently returned from an inspection trip to the ultra-modern plant and the vast territory of 600,000 acres of timber land reserved to the company under a Forest Management License, Harold Blancke, president of Celanese Corp., expressed satisfaction with the progress being made on the project, which will be one of the northernmost industries on the American Continent.

All of the buildings are now under roof and closed-in except where it was necessary to leave walls open for construction purposes. Machinery and equipment is rapidly being installed. At the moment there is nothing in sight to interfere with the schedule which aims to have all major process equipment installed and ready for operation by the final month of this year. The huge boiler house is sufficiently advanced to assure operation by November, providing heat and power to commence production.

Within the next few days, Columbia Cellulose Co., Ltd., will launch its first log-drive. Millions of feet of timber now at rollways will be driven down the Skeena river waterway. River improvements were necessary in several places to permit the operation. Booming grounds are being readied to receive the logs in preparation for the start of pulping operations.

Columbia Cellulose Co.'s plans call for production of high alpha cellulose at a rate initially in excess of 200 tons a day. This is equivalent to about 44 percent of the 1949 consumption of high alpha pulp by the acetate, cuprammonium, and viscose high tenacity tire cord industries combined, and is roughly equal to consumption of such in the cellulose acetate rayon industry alone. The new mill and its lumbering operations should be of significant value to Celanese Corp. of America as well as the economy of northwest British Columbia.

Tonawanda Plant Resumes Operations

NEW YORK — Continental Can Co.'s fibre drum plant at Tonawanda, N. Y., will resume full production on a one-shift basis, September 5, after a suspension of activities since last fall, according to an announcement by C. E. Eggerss, vice-president of Continental's Fibre Drum Division.

HAROLD D. McANENY

Flintkote's Director of Advertising

NEW YORK — Harold D. McAneny was appointed director of advertising of The Flintkote Co., effective August 1, 1950.

Prior to joining Flintkote, Mr. McAneny was advertising manager of the Richmond Radiator Co., an affiliate of Reynolds Metals. Mr. McAneny was formerly connected with the Morris F. Swaney and Henry A. Loudon Advertising Agencies as an Account Executive. Before the War he was with The Kudner Advertising Agency.

MacMillan's Official Opening

VANCOUVER, B. C. — British Columbia's newest pulp mill was officially opened recently in the presence of approximately 400 leading Canadian, United States and British dignitaries. Top ranking representatives of the Federal, Provincial and municipal governments and leading business and technical executives were present. The new sulphate mill, owned by the H. R. MacMillan Export Company Ltd., is located four miles from Nanaimo.

Officiating in the opening ceremonies were H. R. MacMillan, head of the vast MacMillan lumber empire, B. M. Hoffmeister, president of the parent company; Cliff Crispin, manager of the new Harmac Pulp Division; L. G. Harris, plant superintendent; D. H. Baker, technical supervisor; and H. A. Simons, consulting engineer. Others officiating were Byron I. Johnson, Premier; Hon. E. T. Kenney, B.C. Minister of Lands and Forests; Hon. H. Anscomb, B.C. Minister of Finance; Chief Justice Gordon Sloan; General G. R. Pearkes, M.P. for Nanaimo; Hon. R. W. Mayhew, Federal Minister of Fisheries; J. P. Weyerhaeuser, Jr., president Weyerhaeuser Timber Co., Tacoma; Anthony Benn, Benn Publishing Co., London, England; and James Stewart, president of the Canadian Bank of Commerce, Toronto.

The new Nanaimo pulp mill is the result of a forest conservation and waste utilization survey launched under the personal supervision of Mr. MacMillan some time ago. The survey was conducted by Dr. J. S. Bates, recognized expert on waste utilization and former chief of the Forest Products Laboratories of Canada, who recommended that "kraft" pulp production offered the best means of waste utilization. The plant was designed under the supervision of Mr. Simmons, consulting engineer, and work started in 1948, providing employment for 700 persons.

The cost of the present unit was $17,500,000, plus an additional $1,500,000 for the installation of barking and chipping equipment in the company's sawmills. It will utilize 100,000 cubic feet of waste chips made per day from salvage logs and sawmill waste.

The plant will operate as Nanaimo Sulphate, but will be known as the Harmac Pulp Division of the MacMillan organization, and the plant site for this reason has been named Harmac.

$10 Million For Austrian Mills

WASHINGTON, D. C.—In view of the large contribution of Austria's paper industry to the country's overall exports, the ECA recently approved three reconstruction projects for the paper industry involving a total cost of $9.9 million. Of this amount, $3.9 million are to be earmarked for the procurement of machinery and equipment through the ECA under the direct aid program. The first project covers the modernization of two mills of the Arland Papier-und Zellstoff-Fabriken, Inc.

It is expected that production at one of the mills will increase from 8,000 to 17,000 tons, and, at the other, from 10,000 to 16,000 tons per year. In this case, the project will be financed partly by direct ECA aid of nearly $1.2 million, for the purchase of American machinery. Additional funds include $144,000 in German, and $75,000 in Italian, drawing rights, as well as the equivalent in schillings of $1.3 million from the Austrian Counterpart Fund.

The second project, the total cost of which is expected to amount to $3.7 million, calls for the installation of a modern machine for the production of newsprint at the mill of the Muerztaler Holzstoff-und Papierfabrik, Inc., in Bruck-an-der-Mur. Direct ECA aid to

the extent of $1.6 million will be made available for the acquisition of machinery. Additional machinery costing almost $550,000 will be imported from Germany and paid for through Austrian drawing rights in that country. The equivalent of $1,480,000 has been authorized from the ERP Counterpart Fund. Modernization of this mill is expected to raise its yearly output of newsprint from 12,500 to 32,000 tons by 1952. Export of additional newsprint would strengthen Austria's economy by another $1.5 million per year. Modernization of the mill would also result in a yearly $250,000 savings in hard coal.

The third project concerns the modernization of the Brigel & Bergmeister pulp and paper mill in Niklasdorf-an-der-Mur. The total cost of this project will amount to almost $3.6 million, including a release of $1,129,000 for the purchase of American machinery. This project will be further financed by the equivalent of $221,743 in German, $218,085 in Swedish, and $81,650 in Swiss, drawing rights. In addition, the equivalent of $1,925,000 will be made available from the Counterpart Fund. These large-scale investments are expected to raise the yearly production of wood pulp from 26,000 to 30,000 tons and that of paper from 10,000 to 18,000 tons. Despite these production gains, no large-scale increase in raw material requirements will be necessary, because of the use of modern machinery.

Newsprint Supply

NEW YORK—Newspapers are able to carry advertising that is offered them and the present newsprint situation does not require any curtailment in advertising programs, Cranston Williams, general manager of the American Newspaper Publishers Assn., states in a letter to an advertising agency executive.

Text of letter to Maurice Sculfort of Compton Advertising Inc., follows:

Because our association is interested in all problems arising affecting newsprint, I have been told of your recent inquiry to the Bureau of Advertising about the ability of newspapers to accept national advertising contracts in view of rumors of a curtailment in the newsprint supply on account of international developments.

There is nothing in the situation today to cause any worry on the part of a national advertiser or agency insofar as the ability of newspapers is concerned to carry all of the advertising that is offered them. There will be an exception here or there but that has always been the case.

While we are having record consumption figures we are also having record newsprint production and plans are being executed to provide a still larger supply.

Of course, you are aware that should any situation arise affecting our nation's interest that justifies rationing of commodities including newsprint, the amount of newsprint consumed under such regulation would be controlled by the Government and that is a matter over which the individual newspaper publisher would have no control. But I want to emphasize that nothing in the present supply and demand picture justifies an agency or an advertiser to curtail newspaper advertising or worry about the ability of newspapers to handle business which may be offered.

As for optional insertion dates which were readily granted by the advertiser and the agency during World War II when there was curtailment in newsprint use as well as supply, I want to point out that there is nothing abnormal about current requests by some newspapers for optional insertion dates. This leeway in insertion dates frequently eliminates the need for a newspaper to jump two or four pages just to carry one particular ad. For that reason I know you will agree that a request for optional insertion dates by a newspaper should not be construed as any alarm over its ability to carry all of the advertising that is offered.

Distribution Canadian Newsprint

January to July 1950

	Value $
Total Shipments	$235,463,716
Primary Market	
United States	226,816,956
New Zealand	1,469,360
Ireland	1,152,380
Cuba	1,100,217
Mexico	697,461
United Kingdom	654,263
Australia	544,832
Secondary Market or token shipments	
Union South Africa	20,279
India	121,422
Malaya	55,149
Bermuda	20,332
British Guiana	13,632
Jamaica	6,447
Hong Kong	60,438
Argentina	23,787
Belgium Congo	10,296
Bolivia	56,395
Chile	290,921
Colombia	290,427
Costa Rica	114,749
Dominican Republic	8,528
Ecuador	6,959
El Salvador	71,405
Guatemala	35,681
Haiti	11,311
Japan	12,164
Indonesia	10,548
Netherlands Ant.	6,635
Nicaragua	5,647
Israel	11,913
Panama	134,053
Peru	266,037
Philippines	172,240
Portugal	74,708
Port Africa	11,009
Alaska	12,411
Hawaii	329,886
Porto Rico	14,259
Uruguay	145,555
Venezuela	313,989

Pakistan, Brit. Honduras, Bahamas, Fiji Honduras, Iceland, Surinam purchased less than $5,000 worth.

Gardner Erects Warehouse

MIDDLETOWN, Ohio — The Gardner Board and Carton Co. broke ground the week of August 14 for a $300,000 building which will house an ultra-modern employes' locker and lavatory room and contain large warehouse areas.

Constructed of reinforced concrete and steel, faced with red brick, the new two-story building with basement will be 203 feet long and 83 feet wide.

The basement and first floor, almost an acre of area, will be used for warehouse and storage space. An employes' locker and lavatory room, one of the most modern of its kind in the United States, and a large conference room will occupy the entire second floor.

Glazed tile in green and ivory color schemes will face the locker room walls from floor base to ceiling. The flooring will be of colored terrazzo and the latest type of fluorescent lighting will be installed.

Individual lockers will accommodate 650 employes and in the northwest section of the building a foremen's locker and washroom will be constructed.

For the ultimate in cleanliness and sanitation all lockers and toilet fixtures will be suspended off the floor.

Carl H. Martin, architect, designed the new building, and the McGraw Construction Co. of Middletown will construct the new building, expected to be ready for occupancy by the end of the year.

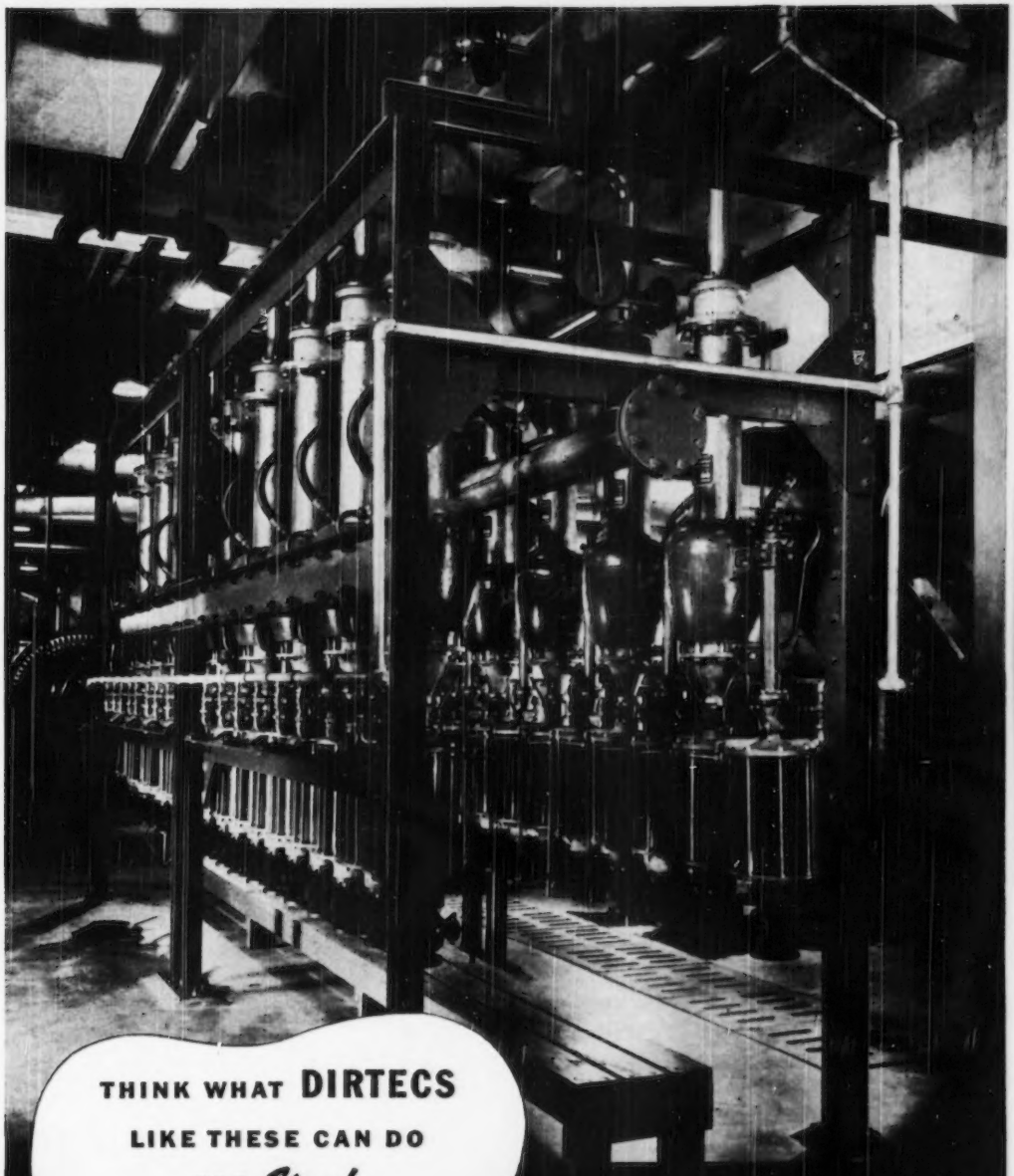
Boxcar Shortage

OTTAWA — The Canadian pulp and paper industry, which is normally a heavy user of railway boxcars, may shortly start to feel the effects of the slow-down in the return of boxcars from the United States where unusual railway activities due to the Korea war are reportedly holding up the return of boxcars.

In the meantime, there is some concern on this side of the border in case shipping is adversely affected by this delay of boxcar returns to Canada, particularly by such an industry as the pulp and paper industry. If such boxcars are not returned any faster, the railways will be unable to meet the shipping demands of such an industry. However, it is learned that so far the situation cannot be described as serious and it is hoped that there will be an improvement shortly. Some concern has been noted by the possibility of boxcar shortages when the Canadian harvest gets underway and heavy industries like the pulp and paper industry might suffer.

Correction

The signature was inadvertently omitted from the Letter to the Editor which appeared on page 20 of the August 17 issue of *Paper Trade Journal*. The writer is E. G. Kleiber of Buenos Aires.



THINK WHAT DIRTECS LIKE THESE CAN DO FOR *You!*

DIRTEC installations like this are going on the job in mill after mill after mill. Easy to install, no trouble to run and keep running, DIRTECS are readily adaptable to *your* stock, *your* dirt removal job, *your* volume requirements. They provide quick, sure, inexpensive protection against competition from cleaner paper in today's choosy market.

Ask us for recommendations and estimates.

BIRD MACHINE COMPANY • South Walpole, Massachusetts

JULY NEWSPRINT REPORT
NEWSPRINT ASSOCIATION OF CANADA, MONTREAL

I. PRODUCTION AND SHIPMENTS in short tons; 2000 pounds.		JULY 1950	JULY 1949	JULY Percent Change	YEAR TO DATE 1950	YEAR TO DATE 1949	YEAR TO DATE Percent Change
1. Canadian Production: including Newfoundland	month and year to date	439,255	421,475	+ 4.2	3,030,826	3,027,025	+ .1
	per working day	17,362	16,792	+ 3.4	16,960	16,939	+ .1
	percent of capacity	102.0	101.2		99.6	102.0	
2. Canadian Shipments: including Newfoundland	to United States	413,604	353,059	+17.1	2,721,037	2,501,110	+ 8.8
	to Canadian Consumers	29,143	27,534	+ 5.8	202,638	193,809	+ 4.6
	to Other Markets	20,592	31,534	—34.7	92,468	268,080	—65.5
	total: all markets	463,339	412,127	+12.4	3,016,143	2,962,999	+ 1.8
3. U.S. Production:	month and year to date	84,280	76,218	+10.6	568,928	534,650	+ 6.4
4. U.S. Shipments:	to U.S. Consumers	82,302	76,239	+ 8.0	561,259	524,069	+ 7.1
	to Other Markets	1,284	894	+43.6	9,715	7,351	+32.2
	total: all markets	83,586	77,133	+ 8.4	570,974	531,420	+ 7.4
5. U.S. Imports from Europe:	*estimate; see Table 8	*14,200	29,036	—51.1	*98,010	176,362	—44.4

II. CONSUMPTION AND STOCKS in short tons; 2000 pounds.		JULY 1950	JULY 1949	JULY Percent Change	YEAR TO DATE 1950	YEAR TO DATE 1949	YEAR TO DATE Percent Change
6. U.S. Consumption:	estimated total	437,349	406,647	+ 7.6	3,369,012	3,159,130	+ 6.6
7. North American Stocks:	U.S. Consumers	620,101	661,768	— 6.3	620,101	661,768	— 6.3
	Canadian Mills	135,873	173,221	—21.6	135,873	173,221	—21.6
	U.S. Mills	8,768	12,176	—28.0	8,768	12,176	—28.0
	estimated total	764,742	847,165	— 9.7	764,742	847,165	— 9.7
8. A.N.P.A. Report: 125 Newspapers	Consumption	336,759	313,118	+ 7.6	2,594,139	2,432,530	+ 6.6
	Stocks (tons)	432,564	493,443	—12.3	432,564	493,443	—12.3
	Stocks (days)	40	49		40	49	

Consider Newfoundland Mill

OTTAWA—It is understood that serious consideration is being given now towards formulating plans for the establishment of a new paper mill in southeastern Placentia Bay area of Newfoundland. The possibility of bringing pulpwood from Labrador to feed this new mill is now under study. So far no other details are available.

Gardner Board Promotions

MIDDLETOWN, Ohio—The election of two new vice-presidents and a series of appointments advancing seven other officials to higher positions was announced by The Gardner Board and Carton Co.

E. T. (Ted) Gardner, Jr., was elected vice-president, finance; and Colin Gardner, III, was named vice-president, operations.

Three other vice-presidents were assigned increased responsibilities and elected to newly-created offices. Colin Gardner and Walter E. Sooy were named executive vice-presidents and Robert B. Gardner was designated as senior vice-president.

In a realignment of the company's finance organization John J. Hain, former controller, was moved to the post of treasurer succeeding Ted Gardner and Floyd Lockard, formerly assistant controller, was appointed controller. Calvin Lloyd, former cost accounting head, was named assistant treasurer and assistant secretary.

Robert O. Brosius, formerly assistant treasurer, was elected to the position of secretary of the company by the board of directors.

Dictionary of Occupational Titles

WASHINGTON, D.C. — The Labor Department's "D O T"—otherwise, the Dictionary of Occupational Titles—is back in use, as war manpower demands create new problems.

Now in two volumes, the work was revised in 1949. It contains some 22,000 occupational definitions, brought up to date, and more than 40,000 titles covering these occupations, for approximately 250 industries.

The reference is used by government, defense establishments, and many private industries and others, to define war production jobs, assign workers according to skills, determine "critical occupations" for various purposes, and for related uses.

Marvellum Wins Safety Contest

HOLYOKE, Mass. — The Marvellum Co. won the industrial accident reduction contest for group 10 in Hampden, Hampshire and Franklin Counties for the first six months of the year with a perfect record.

The paper converting concern had a 100 percent score—no lost time injuries. In that period there were 128,246 man hours worked.

Paper on the Air

George Olmsted and E. W. Tinker will be the stars on "Your Business Reporter" program during the week of August 28. Watch your local station program for time, station, date.

Don't forget Fan Mail for them.

Kenaf As A Jute Substitute

WASHINGTON, D. C. — Insecurity of jute supplies from the Far East is emphasized by the Korean outbreak, the Agriculture Department reports, in calling attention to efforts in this hemisphere to cultivate kenaf fibre, an alternative to jute.

"A supplemental nearby supply of jute-like fibre would give added security to Western Hemisphere countries by easing jute shortages resulting from war or other international complications," the department continued.

It was pointed out that packaging of many industrial and farm products now hinges on jute for sacking, in addition to industrial consumption including wrapping twines.

Cooperative efforts by this country, Cuba, and various Latin American countries, have been under way since 1943, the department recalled, to develop production of a cheap, jute-like substitute for jute itself. Kenaf, a plant resembling jute, with slightly more tensile strength than jute and apparently as good as jute for all commercial uses, was selected as outstanding among various plants tested.

Several growers in the areas mentioned are now planting in commercial acreage, it was reported, and research is now centering on mechanical developments and efforts to have a modern and economical production of the fiber. Difficulties still present, include shortage of kenaf seed for immediate acreage expansion, need of more data on fiber extraction and inadequate Western Hemisphere mill facilities.

New Alabama Mill

According to Paul D. Hammacher, a 200,000 ton yearly newsprint and liner board mill will be built at Naheola, Ala. It is expected that construction of the $40 million plant will begin shortly. The design and engineering will be under L. Morris Mitchell, Inc., construction supervision by H. J. Crookes, Inc., consulting engineers. The J. A. Utley Co. of Detroit will be the builders.

Mr. Hammacher, as president of the Choctaw Pulp & Paper Co., states that it will be a publishers' cooperative venture, the publisher stockholders taking the newsprint tonnage.

The plant site, chosen after careful investigation, is located about 30 miles northeast of Butler and is served by four railroads and the Inland Waterways System.

Austria-Pakistan Trade Agreement

Austria and Pakistan recently signed a trade agreement which provides for an increased volume of trade between the two countries. The new treaty covers a commodity exchange of 4 million pounds sterling. Austria's major purchases from Pakistan will consist of jute, cotton and wheat. In exchange for exports of iron, metal products, paper machinery and chemicals.

THE MEAD SALES COMPANY
230 PARK AVENUE, NEW YORK 17, N. Y.
20 NORTH WACKER DRIVE, CHICAGO 6, ILL.

MEAD
pulp

DISTRIBUTORS OF WOOD PULP
BLEACHED AND UNBLEACHED
CHEMICAL AND MECHANICAL WOOD PULP

Paul Bunyan's whisper was like thunder, but his shouted orders to the lumberjacks killed so many timber wolves that he once broke the Wisconsin state treasury collecting bounties.

A reproduction of this incident from the fabulous life of Paul Bunyan—the fifty-third of a series—will be sent on request. It will contain no advertising.

Corrosion—IV of Series

Maintenance Painting Specifications For Paper Mills

L. S. OYSTER[1]

Part I
Valuable and Interesting Facts

Construction Defects

Many paint failures in paper mills, particularly peeling, blistering or loss of adhesion often can be traced directly to construction defects which permit moisture to accumulate behind paint films. Paint failures caused by construction defects can only be prevented by correcting faulty construction. In some cases it may be found very difficult, or even impossible, to do this and then it will be next to impossible to secure a satisfactory result. Moisture can accumulate behind the paint film where leaks in the roof exist and also very frequently where loose sash permits excessive condensation in places where the water can get into the wood, concrete or brick sidewalls. Any condition which permits water to build up behind the paint film with any kind of hydrostatic head will usually result in early blistering and peeling of the paint. Moisture peeling and blistering of paint as described above are common paint failures to be anticipated because of faulty construction, although conceivably there are other construction defects which may result in other kinds of paint failure.

The possibility of these defects should be investigated and if found should be corrected at once before they become so aggravated as to necessitate construction replacements. Such replacements will cost much more than paint applied to protect those surfaces.

[1] E. I. Du Pont De Nemours & Co., (Inc.), Wilmington, Del.

Mildew Conditions

Frequently in paper mills a condition is set up whereby fungus or mildew growth develops on the painted surface. Where mildew conditions prevail usually it will be found that better results are secured if the paint employed contains an ingredient designed to combat the growth of fungus. Special developments are available which include non-toxic mildew inhibitors. Where mildew conditions exist it is desirable to use Mildew Resisting Finishes. Care should be exercised in painting these areas as moisture is always present and it is necesary to insure proper performance to be sure that such surfaces are dry before repainting. A two coat system such as Mildew Resisting Mill White Undercoater followed by a top coat of "Dulux" Mildew Resisting Mill White has produced improved performance in many cases.

Alkalinity

The danger of alkalinity or lime burning is ever present in paper plants because of the large quantities of water used in its manufacture. It is present in most all operations. When moisture comes in contact with lime it forms active alkali which when contacting the oil in a paint film forms a soap or saponifies the paint film. The only way to correct this condition is to prevent moisture from getting behind the paint film which is most difficult in many cases. The use of chlorinated rubber paints offers the best resistance to this condition. The use of zinc sulphate washes offers only temporary relief as when moisture again enters the surface it brings more alkalinity with it.

Exterior Surfaces of Interior Concrete Tanks (Not Lined)

Wherever concrete tanks exist for the storage of wet materials, such as Beater Chests and Machine Chests and where the exterior walls of which tanks form in effect walls which might be painted, serious consideration should be given as to whether the surfaces are really paintable. If the tank construction is of such a nature that moisture can penetrate through the concrete and develop pressure behind a paint film which might be on the outside of the tank, then blistering and peeling is very likely to ensue. Under such conditions the safest procedure is not to paint.

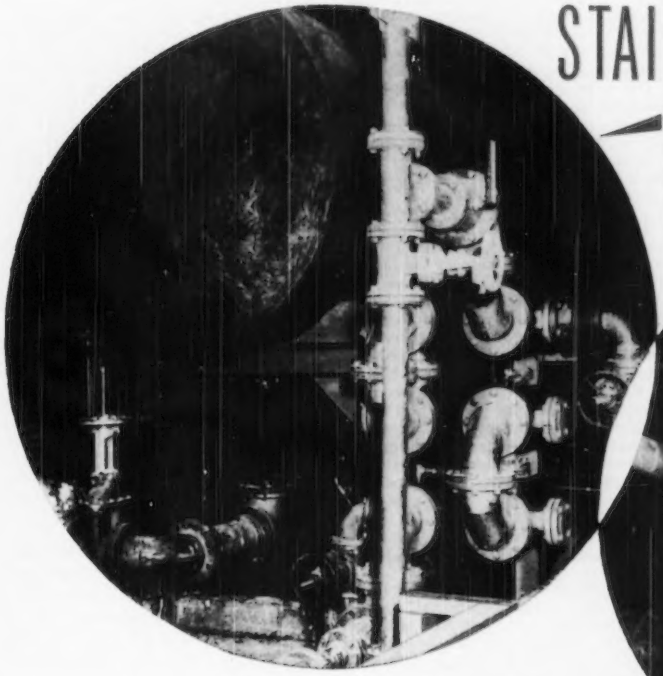
Surface Preparation

Few people realize the full importance of proper surface preparation before painting. A good portion of the success of the painting system specified is dependent upon thoroughly cleaned, dry surfaces, that are free from rust, dirt, dust, surface alkali and other foreign material. We cannot lay too much stress on this operation. Follow the instructions under the section of this survey entitled "Surface Preparation" before finally painting. The time spent in thoroughly preparing surfaces will pay dividends because it will eliminate frequent repainting and save labor cost to do such work.

Sandblasting

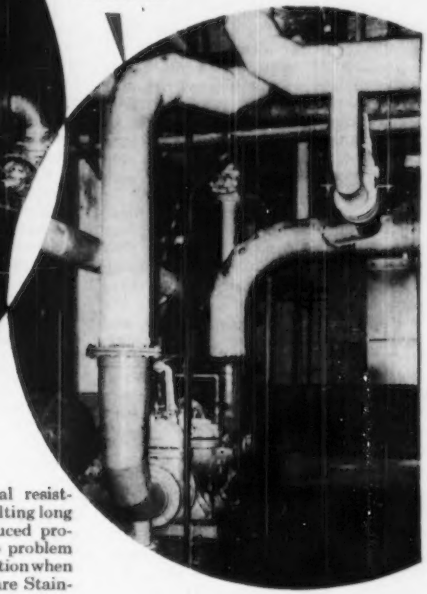
In many instances, it is more economical in the long run to sandblast a

PIPE and TUBING that carry corrosive liquids last far longer when they are U·S·S STAINLESS STEEL



Stainless Steel's resistance to acid corrosion makes it the ideal material for this hot liquor storage tank and delivery lines. The installation is at the Rumford Mill of the Oxford Paper Company, Rumford, Me.

Stainless Steel Piping—durable and free from contamination—is used at the fan pump of a high speed paper machine at Oxford Paper Company's Rumford Mill.



THE broad application of Stainless Steel often has been called one of the most important developments in the field of pulp and paper mill materials. And nowhere have the benefits of Stainless been more important than in heat exchangers, evaporators, white water and liquor lines, and other applications of Stainless Pipe and Tubing.

A large Western mill, for example, found that less durable materials in the first effect of their evaporators lasted only three to six months. But tubing of U·S·S 18-8 Stainless Steel was still in service, apparently untouched by corrosion, eight years after installation.

Stainless Steel's exceptional resistance to acid corrosion and resulting long life shows up quickly in reduced production costs. And there's no problem of contamination and discoloration when stock and white water lines are Stainless Steel.

Stainless Steel in the form of strip, sheets, plates, bars and wire plays equally important roles in hundreds of paper mill applications. Wherever used, the ability of this aristocrat of metals to reduce corrosion losses, to resist wear and abrasion, to withstand extremes of temperature pays off in a better product and reduced maintenance costs.

And for *best* performance from Stainless equipment, be sure that you use U·S·S Stainless Steel. In U·S·S Stainless, every form is available in a wide range of sizes, analyses and finishes—each a perfected, service-tested material, specifically designed for the job assigned.

AMERICAN STEEL & WIRE COMPANY, CLEVELAND · CARNEGIE-ILLINOIS STEEL CORPORATION, PITTSBURGH

COLUMBIA STEEL COMPANY, SAN FRANCISCO · NATIONAL TUBE COMPANY, PITTSBURGH · TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM

UNITED STATES STEEL SUPPLY COMPANY, WAREHOUSE DISTRIBUTORS, COAST-TO-COAST · UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

U·S·S STAINLESS STEEL

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

D-1616

UNITED STATES STEEL

surface, whether it be a concrete wall or a section of steel. The former presents no particular problem other than the fact that a three coat painting system would be necessary to bring it up to a surface which would be impervious to moisture and other abnormal operating conditions in a paper mill. In the case of steel, we cannot caution you too much about sandblasting too great an area at a time.

Sandblasted steel is particularly receptive to corrosion, and rusting will immediately set in where it does not *at once* receive a coat of the correct metal primer specified. A safe way to assure how much surface to sandblast, is that sandblasting should not be over one hour ahead of applying the primer.

Drying Times

In many parts of a paper mill speed in drying is the essence of success. Unfortunately, many times the faster drying paints do not possess the durability or performance characteristics of certain slower drying types of paints, although this is not as true today as it was a number of years ago. In most cases, however, even with fast drying durable paints, it will be found that where longer drying times are possible, better durability will result. It is recognized, however, that very often extremely short drying times are a necessity and in these cases a compromise between the length of the shut-down period and paint durability must be accepted. Recognition is given this factor in the painting recommendations included and faster drying primers and finishes are specified where on the average very short periods are available for painting.

Treated Lumber—(Creosote)

It is recognized that it is frequently very difficult to apply paint to lumber which has been treated with Creosote. There is a definite tendency for the Cresote to bleed into most kinds of paint and discolor the surface and, in addition, there is always the possibility of some loss of adhesion, depending upon the activity of the Creosote in the wood. Aluminum paint will ordinarily be found to be the most practical finish for this type of surface. The application, preferably by spray of one or two coats of Aluminum paint is suggested as the most practical finish available for painting this type of surface.

Treated Lumber—(Zinc Salts)

Our experience in painting lumber of this type indicates that if the lumber is thoroughly dry at the time of painting, and there are no unabsorbed salts on the surface, it may be painted the same as untreated lumber. Since the Salts treatment consists of impregnation with water soluble salts, painting with products containing water in the vehicle portion such as resin emulsion paint should be avoided since bleeding and staining will probably result. If, on the other hand, conditions exist which may allow moisture to subsequently enter or come in contact with salt treated lumber surfaces, then a certain amount of "leaching out" of the salts with subsequent staining may result even with oil type finishes. Accordingly, it is imperative that all such surfaces which might be subjected to moisture conditions should be thoroughly sealed when painted to eliminate as far as possible future staining troubles. Such conditions are most likely to be encountered where high humidity exists.

The best plan to insure satisfactory results when painting such surfaces is first,—be sure the surface is *absolutely dry*. If examination shows the presence of salts or dampness, allow further time to elapse before painting, then go over surface briskly with a stiff brush before painting. Apply a prime coat of Ready-to-Mix Aluminum Paint and when dry, follow with usual finishing system. The best time to paint such a surface is in the early summer, when inside and outside surface are of equal temperature and when there is likely to be little or no condensation present.

Acid Resistant Finishes—(Bakelite)

These finishes are recommended for all surfaces, especially metal, where protection from moisture and acid are required. They lay down a heavy film that dries very hard and is resistant to moisture and most acids.

Alkali Resistant Finishes (Chlorinated Rubber)

These finishes are recommended for those surfaces where alkalinity is a problem and where resistance to chlorine and bleaching agents are needed. They lay down relatively thin films so that in order to secure satisfactory film thickness three or more coats are desirable. They dry very rapidly and should be used where speed of dry is essential and required drying intervals for other finishes is not possible to obtain.

Important Notice

Choose the finish best suited for the condition as outlined above.

Painting Systems

Our painting specifications for the sake of completeness are based on the assumption that you will be painting new unfinished surfaces. If the conditions prevailing have caused the previous finish to lose adhesion down to the bare surface, then it is advisable to apply the complete painting system specified. If the present finish shows absolute adhesion, then it probably is only necessary to apply the finish coat specified. Oftentimes an undercoat adds to the adhesion of the painting system. If at any time, however, you are uncertain as to what the procedures should be, call in our sales engineer. He will quickly advise you after inspecting the surfaces to be painted. The application of the correct material on each surface as specified by us is important. Likewise, experience has definitely disclosed the importance of film thickness on certain surfaces. Therefore, the specifications are built around the idea of enjoying maximum service from the materials listed.

When to Paint

With the vast amount of moisture and water prevailing in many operating areas, we urge you to plan your maintenance painting during the warm months of the year. At this time the moisture condition is at a minimum. You will find you can dry out surfaces easier, quicker and more thoroughly. This means you obtain a longer life from the paint specified, better protection for the surfaces—thus eliminating frequent repaintings. It reduces overhead and saves money.

Certain operating conditions may prohibit seasonal painting. Schedules may be set up to include "around-the-calendar" painting operations. Consultation at the time a survey of the mill is made can best determine this factor.

Acid and Alkali Fumes

Exterior steel frame work, particularly coal hoists, may be subjected to both acid and alkali fumes as discharged through the various vomit stacks, depending on the mill which you are surveying. Do not expect any of our finishes to withstand this action, particularly with coal dust and screenings falling over the structure, which in a sense acts as an abrasive, removing very slowly, the paint film along with the actions of the acid and alkali fumes present in the discharging moist vapor. Test indicates that Submarine Primer followed by either the red or the black Acid Resisting Finishes performs the best. Do not expect "Dulux" Metal Protective Finish to hold up here, unless you can give it a week's drying time prior to any use of the structure or the discharge through vomit stacks.

Part II

Painting Specifications for Filter Plant, Saw Mill & Wood Room, Boiler House, Hydro-Electric Plant, Turbine & Generator Rooms, in Ground Wood, Sulphite & Sulphate, Mills and Rag Mills where applicable.

Prevention of Corrosion is Your Primary Maintenance Problem

Rusting of steelwork goes on continually throughout the plant because of the moisture and acid fumes that promote rapid disintegration of ferrous metals. Replacement of steel is costly under ordinary conditions, but manpower shortages can make this practice more expensive when there is more work to be done than labor with which to do it. For this reason, we insist that every effort be made to remove all traces of rust prior to painting to prevent early failure of the paint film and further destruction of the metal surfaces. If a thorough job of rust removal is not accomplished, we can expect an early paint failure and manpower, paint materials and steelwork are wasted.

If ridges of rust scale and pitted sections are allowed to remain on the steel, a uniform paint film cannot be laid down and the acid fumes will attack the film at the weak points—the ridges, and rims of the pits—and early failure of the paint will result. We cannot over-emphasize the importance of this cleaning operation, for on thoroughness of its execution depends the performance and life of the paint system you use. This includes ridges, rivet heads, bolt heads, angles, lapped metal, perforations, grating, etc.

We further believe that proper surface preparation is so vital that we have devoted this extensive precautionary foreword to precede the painting recommendations for each "Mill" section.

Notice—In preparing these specifications we are listing the systems to be used on materials most generally encountered for the surfaces involved. If other materials are used than those listed in the specifications, the primer or first coat should be changed to meet the condition. The finishing coats should remain the same.

In many cases where "Acid Resisting Finishes" are specified our new "Chemical Resisting Finishes" may be used as an alternate. Test areas should be applied to determine the most satisfactory system.

Important—To avoid fume or acid deposits being sandwiched between paint films the shortest possible drying time between coats should be allowed.

Pipe Identification

Specification for Application

Metal Pipe

Color identification of pipes is valuable and practical and should be followed by this industry. Much latitude in this use of color is necessary because of the varied requirements of different plants, and operating engineers. It would be judicious on your part to first determine whether an adaptation of the Safety Color Code is far as pipe line identification is concerned, meets with the approval of the management, before furthering this idea.

The use of colors and symbols for piping identification should be considered part of the Safety Color Code for Industry. The American Standards Association reviewed the application of such a system some years ago and found it desirable. Just recently, the American Society of Mechanical Engineers adopted the ASA standards as their standards, and it is believed that industry in general, and this industry in particular, will soon follow that system of identification.

The main features of this code embody the identification of pipes at conspicuous places throughout the system, color bands being painted on the pipes to designate the classification of its contents. It is not necessary, therefore, to identify the pipe at every connection or fitting. Generally, a piping system is painted with the same material and the same color as used on the wall or ceiling surfaces immediately adjacent to the pipe line, but this may have to be varied because of temperatures, lack of insulation of hot lines, etc. In such cases likely a deep buff or an aluminum paint on hot lines would be necessary, and then the color identification placed as a band around the pipe, and its contents should be placed thereon.

Occasionally, an operating engineer may like to have the pipe lines painted throughout one color, each line receiving its own color. Of course, this is permissible, but it is much better to have an overall painting practice with only sufficient identification by color, as needed. You can readily see the economy in painting pipes when near a ceiling with the ceiling color, and with the wall color, when near the wall.

Further identification beyond the color band and stenciled name, may be extended by the use of colored stripes placed at the edges of the colored band.

The bands, legends, and stripes shall be placed at intervals throughout the piping system, preferably adjacent to valves and fittings to insure ready recognition during operations, repairs, and at times of emergency.

Surface Preparation

Thoroughly scrape and wire brush these surfaces to remove rust, loose and scaling paint, and foreign material. Be sure they are dry and clean.

Priming Coat

Brush or spray either an over-all coat or touch-up coat of Du Pont Submarine Primer applied as received or slightly reduced with turpentine, if necessary. Allow to dry maximum of 16 hours.

Finish Coats

Apply finish coats as specified in the sections of the survey according to general practice or new adaptation.

Canvas Covered Pipe

Pipe lines of this composition can be finished in any of the foregoing systems. If the surfaces have been previously painted and properly sealed, by such applications of paint, then omit the "priming coat" specified above and apply the finishing system.

If it is newly installed canvas covered piping, substitute Du Pont Composition Board Sealer for the "Priming coat" and follow with any of the systems specified above.

Painting Specifications

FILTER PLANT (DRY EXPOSURE)

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Ceiling, Walls	Masonry	Primer Sealer	Mill White Undercoat	"Dulux" Mill White Gloss or Eggshell
Beams, Pillars	Steel	"Dulux" Metal Protective Primer	Mill White Undercoat or Prepared Ready to Mix Aluminum Paint	"Dulux" Mill White Gloss or Eggshell or Prepared Ready to Mix Aluminum Paint
Sash, Doors, Trim	Steel	"Dulux" Metal Protective Primer	"Dulux" Machinery Finish or Dado Enamel	"Dulux" Machinery Finish or Dado Enamel
Sash, Doors, Trim	Wood	"Dulux" Machinery Finish or Dado Enamel	"Dulux" Machinery Finish or Dado Enamel	"Dulux" Machinery Finish or Dado Enamel
Dado	Masonry	Primer Sealer	"Dulux" Machinery Finish or Dado Enamel	"Dulux" Machinery Finish or Dado Enamel
Machinery, Equipment		"Dulux" Machinery Finish Oxide Primer	"Dulux" Machinery Finish	"Dulux" Machinery Finish
Piping	See Piping Chart—to follow "Safety Color Code."			
Floors		Interior Floor Enamel	Interior Floor Enamel	Interior Floor Enamel

NOTE: (1) *Dry exposure* means the atmospheric conditions surrounding these surfaces are normal and fumes and moisture are negligible.
(2) *Galvanized metal*—If any of the metal surfaces are galvanized, prime with "Galvanized Metal Primer," instead of the metal primer specified above.

FILTER PLANT (WET EXPOSURE)

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Ceilings, Walls	Masonry	Primer Sealer	Mill White Undercoat	"Dulux" Mill White Gloss or Eggshell
Beams, Pillars	Steel	*Submarine Primer	Acid Resisting Finish or Acid Resisting Aluminum Paint	Acid Resisting Finish or Acid Resisting Aluminum Paint
Sash, Doors, Trim	Steel	*Submarine Primer	Acid Resisting Finish or Acid Resisting Aluminum Paint	Acid Resisting Finish or Acid Resisting Aluminum Paint
Sash, Doors, Trim	Wood	Acid Resisting Finish or Acid Resisting Aluminum Paint	Acid Resisting Finish or Acid Resisting Aluminum Paint	Acid Resisting Finish or Acid Resisting Aluminum Paint
Dado	Masonry	Primer Sealer	Dado Enamel	Dado Enamel
Floors	Since these surfaces are subjected to so much water, and other abnormal usage, there is no economy in painting them.			
Piping	See Piping Chart—to follow "Safety Color Code."			
Pumps, Valves		Submarine Primer	Acid Resisting Finish	Acid Resisting Finish

NOTE: (1) *Wet exposure* represents surfaces subject to more or less constant moisture condensation.
(2) *Galvanized metal*—If any of the metal surfaces are galvanized, prime with *"Galvanized Metal Primer," instead of the metal primer specified above.

FILTER PLANT (TOTAL IMMERSION)

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Trash Racks, Etc.	Steel	Submarine Primer	Submarine Primer	Acid Resisting Finish, Red or Aluminum

NOTE: (1) *Total immersion*—represents surfaces constantly submerged in water.

HYDRO-ELECTRIC PLANT, ALSO TURBINE & GENERATING ROOMS

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Ceilings, walls	Masonry	Primer Sealer	Mill White Undercoat	"Dulux" Mill White Gloss or Eggshell
Beams, Pillars	Steel	"Dulux" Metal Protective Primer	Mill White Undercoat	"Dulux" Mill White Gloss or Eggshell
Sash, Doors, Trim	Steel	"Dulux" Metal Protective Primer	"Dulux" Machinery Finish Dado Enamel	"Dulux" Machinery Finish or Dado Enamel
Sash, Doors, Trim	Wood	"Dulux" Machinery Finish or Enamel Dado	"Dulux" Machinery Finish Dado Enamel	"Dulux" Machinery Finish or Dado Enamel
Dado	Masonry	Primer Sealer	"Dulux" Machinery Finish or Dado Enamel	"Dulux" Machinery Finish or Dado Enamel
Floors		Interior Floor Enamel	Interior Floor Enamel	Interior Floor Enamel
Machinery, Equipment		"Dulux" Machinery Finish Oxide Primer	"Dulux" Machinery Finish	"Dulux" Machinery Finish
Piping	See Piping Chart—to follow "Safety Color Code."			

NOTE: *Galvanized metal*—If any of the metal surfaces are galvanized, prime with *"Galvanized Metal Primer," instead of the metal primer specified above.

Hazards	As used on previous areas	Safety Color Code Finishes

SAW MILL & WOOD ROOM (GROUND WOOD, SULPHITE & SULPHATE MILLS)

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Ceilings, Walls	Masonry	Primer Sealer	Mill White Undercoat	"Dulux" Mill White Gloss or Eggshell
Beams, Pillars	Steel	*Submarine Primer	Ready to Mix Aluminum Paint or above system	Ready to Mix Aluminum Paint or above system
Sash, Doors, Trim	Steel	*Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Sash, Doors, Trim	Masonry	Dado Enamel	Dado Enamel	Dado Enamel
Machinery & Equipment		*Submarine Primer	"Dulux" Machinery Finish	"Dulux" Machinery Finish
Piping	See Piping Chart—to follow "Safety Color Code."			
Floors	Since these surfaces are subjected to so much water, there is no economy in painting them.			

NOTE: (1) A general moist condition prevails in these areas due to operations which warrant the use of moisture resisting finishes as specified above.
(2) Best results are obtained when paint is applied to dry surfaces. Therefore, paint during the warm dry months of the year.
(3) *Galvanized metal*—If any of the metal surfaces are galvanized, prime with *"Galvanized Metal Primer," instead of the metal primer specified above.
(4) If mildew is prevalent, especially treated finishes should be used, information about which will be supplied upon application.

BOILER HOUSE

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Ceilings, Walls	Wood or Masonry		Ready to Mix Aluminum Paint	Ready to Mix Aluminum Paint
Beams, Pillars	Steel	*"Dulux" Metal Protective Primer	Ready to Mix Aluminum Paint	Ready to Mix Aluminum Paint
Sash, Doors, Trim	Steel	*"Dulux" Metal Protective Primer	Dado Enamel	Dado Enamel
Sash, Doors, Trim	Wood	Dado Enamel	Dado Enamel	Dado Enamel
Dado	Masonry	Black Label Primer Sealer	Dado Enamel	Dado Enamel
Floors	There is no economy in painting these surfaces.			
Machinery & Equipment		Submarine Primer	"Dulux" Machinery Finish	"Dulux" Machinery Finish
Hot Surfaces (Represents surfaces ranging from 250° to 500° F.)			Heat Resisting Aluminum Paint	Heat Resisting Aluminum Paint
Piping	See Piping Chart—to follow "Safety Color Code."			

NOTE: *Galvanized metal*—If any of the metal surfaces are galvanized, prime with *"Galvanized Metal Primer," instead of the metal primer specified above.
Ceilings, walls, beams, and *pillars* may be finished in white, using the "Dulite" system if the physical structure and areas will permit. Consultation with the management should decide this factor.
See "Safety Color Code" section of this manual for adoption of safety features in this area.

GROUND WOOD MILL

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Ceilings, Walls	Masonry	Primer Sealer	Mill White Undercoat	"Dulux" Mill White Gloss
Beams, Pillars	Steel	*Submarine Primer	Acid Resisting Finishes	Acid Resisting Finishes
Sash, Doors, Trim	Steel	*Submarine Primer	Acid Resisting Finishes	Acid Resisting Finishes
Sash, Doors, Trim	Wood	Mill White Undercoat	Acid Resisting Finishes	Acid Resisting Finishes
Dado	Masonry	Primer Sealer	Acid Resisting Finishes	Acid Resisting Finishes
Machinery, Equipment		Submarine Primer	Acid Resisting Finishes	Acid Resisting Finishes
Piping	See Piping Chart—to follow "Safety Color Code."			
Floors	No recommendation—Since these surfaces are subjected to so much water, there is no economy in painting them.			

NOTE: (1) A general moist condition prevails in these areas due to operations which warrant the use of moisture resisting finishes as specified above.
(2) *Galvanized metal*—If any of the metal surfaces are galvanized, prime with *"Galvanized Metal Primer," instead of the metal primer specified above.
(3) If mildew is prevalent, especially treated finishes should be used, information about which will be supplied upon application.

SULPHITE MILL

ACID PLANT

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Ceilings and Walls	Masonry	Primer Sealer	Fume Resisting Mill White	Fume Resisting Mill White
Beams, Pillars	Steel	Acid Resisting Primer	Acid Resisting Finish	Acid Resisting Finish
Sash, Doors, Trim	Steel	Acid Resisting Primer	Acid Resisting Finish	Acid Resisting Finish
Sash, Doors, Trim	Wood		Acid Resisting Finish	Acid Resisting Finish
Dado	Masonry	Acid Resisting Finish	Acid Resisting Finish	Acid Resisting Finish
Piping		Acid Resisting Primer	Acid Resisting Finish	Acid Resisting Finish
Floors	No recommendation—since these surfaces are subjected to abnormal conditions in painting them.			
Hot Surfaces	These surfaces reach a temperature which makes it inadvisable to paint them.			

NOTE: (1) These are suggested finishes for confined areas. If the ventilation is exceptionally good in this area, the "Dulux" system as described in the next section will work here.

(2) To follow "Safety Color Code" identification as closely as Acid Resisting Colors permit. All piping, steel, cast iron, other than lead, to be finished in Acid Resisting Finishes.

(3) These surfaces are subject to Sulphur Dioxide and Sulphurous Acid fumes which attack the surfaces and accelerate disintegration. Paints like the ones specified above retard disintegration to a marked degree. It is advisable on new steel to be erected to have it come primed from the fabricator with Acid Resisting Primer and not the usual "shop-coat."

DIGESTER BUILDING, ALSO BLOW PITS & ACCUMULATORS

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Ceilings and Walls	Masonry	Primer Sealer	Mill White Undercoat	"Dulux" Mill White Gloss
Beams, Pillars	Steel	Acid Resisting Primer	Acid Resisting Finish	Acid Resisting Finish
Sash, Doors, Trim	Steel	Acid Resisting Primer	Acid Resisting Finish	Acid Resisting Finish
Sash, Doors, Trim	Wood		Acid Resisting Finish	Acid Resisting Finish
Dado	Masonry	Primer Sealer	Acid Resisting Finish	Acid Resisting Finish
Machinery & Equipment		Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Piping		Alkali Resisting Primer	Alkali Resisting Finish	Alkali Resisting Finish
	NOTE: Chemical Resisting Finishes may be substituted for Acid or Alkali Resisting Finishes by specifying proper primer, intermediate coat and top coat.			
Floors	No recommendation—Since these surfaces are subjected to abnormal conditions, there is no economy in painting them.			

NOTE: (1) The fumes throughout these areas attack paint films readily. It is necessary that metal surfaces be protected with finishes extremely resistant to the fumes. The entire specifications outlined above have performed exceptionally well under the abnormal conditions prevailing.

(2) In some plants digesters overflow and the liquor quickly disintegrates protective coatings. Control this condition and the system specified above will pay dividends in surface protection and appearance.

(3) *Galvanized metal*—If any of the metal surfaces are galvanized prime with "Galvanized metal primer," instead of the metal primer specified above.

(4) Alkali Resisting Finishes (Chlorinated Rubber) have been suggested for these surfaces which may come in direct contact with the overflow liquors—at least three coats are recommended because of the need for adequate film thickness.

(5) It is advisable on new steel to be erected to have it come primed from the fabricator with Acid Resisting Primer and not the usual "shop-coat."

BEATER ROOMS, WET MACHINE ROOMS, WET BASEMENTS AND LAP PULP & STORAGE

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Ceilings and Walls	Masonry	Primer Sealer	Mill White Undercoat	"Dulux" Mill White Gloss
Beams, Pillars	Steel	*Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Sash, Doors, Trim	Steel	*Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Sash, Doors, Trim	Wood		Acid Resisting Finish	Acid Resisting Finish
Dado	Masonry	Acid Resisting Finish	Acid Resisting Finish	Acid Resisting Finish
Machinery and Equipment		Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Piping		Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Floors	There is no economy in painting these surfaces.			

NOTE: (1) A general moist condition prevails in these areas due to operations which warrant the use of moisture resisting finishes as specified above.

(2) *Galvanized metal*—If any of the metal surfaces are galvanized, prime with *"Galvanized Metal Primer," instead of the metal primer specified above.

(3) If mildew is prevalent, specially treated finishes should be used, information about which will be supplied upon application.

(4) Because of the moist condition in this area, it is suggested they be finished with Acid Resisting Finishes.

(5) Alkali Resisting Finishes (Chlorinated Rubber) have been suggested for those surfaces that come in direct contact with the liquors—at least three coats are needed to insure adequate film thickness.

(6) Chemical Resisting Finishes may be substituted for either Acid or Alkali Resisting Finishes by specifying proper primer, intermediate coat, and top coat.

BLEACH MANUFACTURE

Surface	*Material*	*Primer*	*Undercoat*	*Finish Coat*
Ceilings and Walls	Masonry	Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Beams, Pillars	Steel	Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Sash, Doors, Trim	Steel	Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Sash, Doors, Trim	Wood	Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Dado	Masonry	Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Machinery & Equipment		Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Caustic Evaporating Tanks	Steel	Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Piping		Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Floors	There is no economy in painting these surfaces.			

NOTE: (1) The chemical fume conditions in this area are usually very severe and it is difficult to accomplish adequate surface preparation. The finishes specified above have a high degree of chemical resistance but it may be necessary to recoat sooner than anticipated. It is suggested that these systems and others that may be offered, on inquiry, be tested.

(2) *Pipe identification*—To identify various pipe lines paint nipples, elbows and couplings with the identifying color of the lines as per the Safety Color Code.

(3) Chemical Resisting Finish may be substituted for Alkali Resisting Finishes by specifying proper primer, intermediate coat, and top coat.

BLEACHERY

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Ceilings and Walls	Masonry	Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Beams, Pillars	Steel	Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Sash, Doors, Trim	Steel	Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Sash, Doors, Trim	Wood	Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Dado	Masonry	Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Piping		Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Machinery & Equipment		Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Floors	Concrete	There is no economy in painting these surfaces.		

NOTE: (1) A general moist condition prevails in these areas due to operations which warrant the use of moisture re-sisting finishes as specified above.

(2) *Pipe identification*—To identify various pipe lines paint nipples, elbows and couplings with the identifying color of the lines as per the Safety Color Code.

(3) *Galvanized metal*—If any of the metal surfaces are galvanized, prime with "Galvanized Metal Primer," instead of the metal primer specified above.

(4) Chemical Resisting Finishes may be substituted for Alkali Resisting Finishes by specifying proper primer, intermediate coat, and top coat.

MACHINE ROOMS

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Ceilings and Walls	Masonry	Primer Sealer	Mill White Undercoat	"Dulux" Mill White Gloss or Eggshell
Beams, Pillars	Steel	Submarine Primer	Mill White Undercoat	"Dulux" Mill White Gloss or Eggshell
Sash, Doors, Trim	Steel	Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Sash, Doors, Trim	Wood	Acid Resisting Finish	Acid Resisting Finish	Acid Resisting Finish
Dado	Masonry	Primer Sealer	Acid Resisting Finish	Acid Resisting Finish
Piping	See Piping Chart—to follow "Safety Color Code."			
Floors	There is no economy in painting these surfaces.			
Machinery except Paper Machines		Submarine Primer	Acid Resisting Machinery Finish	Acid Resisting Finish
Fourdrinier		Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Drier Rolls		Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Hoods (Inside and Out)		Acid Resisting Primer	Acid Resisting Aluminum Paint	Acid Resisting Aluminum Paint

NOTE: (1) Color Conditioning can be used to good advantage in this area. Dulux Semi-Gloss White on ceiling—No. 7 Lt. Green on side walls and No. 8 Medium Green dado is very good. However, other combinations can be used to advantage if desired or because of local conditions.

(2) Chemical Resisting Finishes may be substituted for Alkali Resisting Finishes by specifying proper primer, intermediate coat, and top coat.

WHITE WATER RECLAMATION

Surface	*Material*	*Primer*	*Undercoat*	*Finish Coat*
Ceilings and Walls	Masonry	Primer Sealer	Mill White Undercoat	"Dulux" Mill White Gloss or Eggshell
Beams, Pillars	Steel	Submarine Primer	Mill White Undercoat	"Dulux" Mill White Gloss or Eggshell
Sash, Doors, Trim	Steel	Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Sash, Doors, Trim	Wood		Acid Resisting Finish	Acid Resisting Finish
Piping		Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Floors		There is no economy in painting these surfaces.		
Settling Tanks (Interior) also Agitators		Chemical Resisting Finishes		Chemical Resisting Finishes

NOTE: (1) A general moist condition prevails in these areas due to operations which warrants the use of moisture resisting finishes as specified above.

(2) *Pipe identification*—To identify various pipe lines paint nipples, elbows and couplings with the identifying color of the lines as per Safety Color Code.

CALENDER ROOM—COATING ROOM—COUNTING ROOM—FINISHED PRODUCT STORAGE—FINISHING ROOM—LABORATORIES—OFFICES—STAIR WELLS—TOILETS

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Ceilings and Walls	Masonry	Primer Sealer	Mill White Undercoat	"Dulux" Mill White or C. C. Finishes
Beams, Pillars	Steel	Submarine Primer	Mill White Undercoat	"Dulux" Mill White or C. C. Finishes
Sash, Doors, Trim	Steel	Submarine Primer	Mill White Undercoat—Tinted	Color Conditioning Finishes
Sash, Doors, Trim	Wood	Mill White Undercoater	Color Conditioning Finish	Color Conditioning Finish
Dado	Masonry	Primer Sealer	Mill White Undercoat—Tinted	Color Conditioning Dado Enamel
Machinery and Equipment		"Dulux" Machinery Finish Oxide Primer	"Dulux" Machinery Finish	"Dulux" Machinery Finish
Floors		No recommendation.		
Piping		See Piping Chart, following Safety Color Code.		

SULPHATE (KRAFT) MILL

CAUSTICIZING AREA—CHIP HOPPER AREA—DIFFUSING TANK AREA—DIGESTER AREA—SODA RECOVERY AREA

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Ceilings and Walls	Masonry	Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Beams, Pillars	Steel	Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Sash, Doors, Trim	Steel	Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Sash, Doors, Trim	Wood	Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Dado	Masonry	Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Machinery and Equipment		Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Piping		Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Floors	No recommendations—Since these surfaces are subjected to abnormal conditions, there is no economy in painting them.			

NOTE: (1) The chemical fume condition in this area is usually very severe and it is difficult to accomplish adequate surface preparation. The finishes specified above have a high degree of chemical resistance but it may be necessary to recoat sooner than anticipated. It is suggested that these systems and others that may be offered, on inquiry, be tested.

(2) *Pipe identification*—To identify various pipe lines, paint nipples, elbows, and couplings with the identifying color of the lines as per the Safety Color Code.

(3) Our Chemical Resisting Finishes can be used to good advantage in this area. Simply substitute the proper primer, intermediate and top coat for the Alkali Resisting system specified.

SCREEN OR WET MACHINE ROOMS & LAP PULP STORAGE

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Ceilings and Walls	Masonry	Primer Sealer	Mill White Undercoat	"Dulux" Gloss
Beams, Pillars	Steel	Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Sash, Doors, Trim	Steel	Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Sash, Doors, Trim	Wood	Acid Resisting Finish	Acid Resisting Finish	Acid Resisting Finish
Dado	Masonry	Acid Resisting Finish	Acid Resisting Finish	Acid Resisting Finish
Piping		Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Floors	There is no economy in painting these surfaces.			

NOTE: (1) A general moist condition prevails in these areas due to operations which warrant the use of moisture resisting finishes as specified above.

(2) *Pipe identification*—To identify various pipe lines paint nipples, elbows and couplings with the identifying color of the lines as per Safety Color Code.

(3) If mildew is prevalent, specially treated finishes should be used, information about which will be supplied upon application.

BEATER ROOMS

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Ceilings and Walls	Masonry	Primer Sealer	Mill White Undercoat	"Dulux" Mill White or C. C. Finishes
Beams, Pillars	Steel	*Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Sash, Doors, Trim	Steel	*Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Sash, Doors, Trim	Wood	Acid Resisting Finish	Acid Resisting Finish	Acid Resisting Finish
Dado	Masonry	Acid Resisting Finish	Acid Resisting Finish	Acid Resisting Finish
Piping		*Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Machinery and Equipment		*Submarine Primer	Acid Resisting Finish	Acid Resisting Finish

NOTE: Chemical Resisting Finishes may be substituted for the Acid Resisting Finishes specified above.

Floors — No recommendation—Since these surfaces are subjected to abnormal conditions, there is no economy in painting them.

NOTE: (1) A general moist condition prevails in these areas due to operations which warrant the use of moisture resisting finishes as specified above.

(2) *Pipe identification*—To identify various pipe lines paint nipples, elbows and couplings with the identifying color of the lines as per Piping Identification Chart.

(3) *Galvanized metal*—If any of the metal surfaces are galvanized, prime with *"Galvanized Metal Primer," instead of the metal primer specified above.

(4) If mildew is prevalent, specially treated finishes should be used, information about which will be supplied upon application.

MACHINE ROOMS

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Ceilings and Walls	Masonry	Primer Sealer	Mill White Undercoat	"Dulux" Mill White Gloss or Eggshell
Beams, Pillars	Steel	*Submarine Primer	Mill White Undercoat	"Dulux" Mill White Gloss or Eggshell
Sash, Doors, Trim	Steel	*Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Sash, Doors, Trim	Wood	Acid Resisting Finish	Acid Resisting Finish	Acid Resisting Finish
Dado	Masonry	Primer Sealer	Acid Resisting Finish or Dado Enamel	Acid Resisting Finish or Dado Enamel
Piping	See Piping Chart			
Floors	No recommendation—Since these surfaces are subjected to so much water, there is no economy in painting them.			
Machinery except Paper Machines		*Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Fourdrinier		Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Drier Rolls		Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Hoods (Inside and Out)			Acid Resisting Aluminum Paint	Acid Resisting Aluminum Paint

NOTE: (1) In the overall painting of the wet end of a paper machine, the operating management must determine how long they will allow the machine to be available for painting. Usually a week end shut down comprises no longer than 48 hours, that is from Saturday morning until Monday morning. This is usual in the paper mill field. You must remember when the mills shut down there is a clean up period; the wire must be removed, and general repairing on the fourdrinier is done long before the paint crew gets to it. This may shorten the time as much as 8 hours. The machine then has to be cleaned, and it may require blow torches, and scrapers, etc., and this will shorten the time another 8 hours. That leaves 36 hours remaining for paint films to be applied and to dry. Using the Submarine Primer this should dry 8 hours prior to the second coat application. The second coat should be applied, so that it has as close to 20 to 24 hours drying time, prior to the machine starting up, and under no circumstances should this period be crowded. It is far better to allow a priming coat and one finish coat, and then suggest to the operators that they can apply the final finish coat at a later time, when they can get a crew on the machine and clean it up, spot prime, and then overall finish coats the fourdrinier and other sections of the wet end. Our experience in painting paper machines prove conclusively that we have a superior product in our Acid Resisting Finish, but it must be treated with care in application, and be given a fair chance to dry properly prior to the machine being put into operation.

In application of the primer and finish coats, insurance must be given that all sharp edges be coated out thoroughly so that film thickness may be somewhat uniform throughout.

(2) If mildew is prevalent, specially treated finishes should be used, information about which will be supplied upon application.

(3) Galvanized metal—If any of the metal surfaces are galvanized, prime with *"Galvanized Metal Primer," instead of the metal primer specified above.

LABORATORIES, OFFICES, STAIR WELLS, TOILETS, REST ROOMS, FINISHED PRODUCT STORAGE

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Ceilings	Masonry	Primer Sealer	Mill White Undercoat	"Dulux" Mill White Gloss or Eggshell
Walls	Masonry	Primer Sealer	Mill White Undercoat—Tinted	C. C. Finishes
Beams, Pillars	Steel	"Dulux" Metal Protective Primer	Mill White Undercoat—Tinted	C. C. Finishes
Sash, Doors, Trim	Steel	"Dulux" Metal Protective Primer	Mill White Undercoat—Tinted	C. C. Finishes
Sash, Doors, Trim	Wood	Mill White Undercoat	Mill White Undercoat—Tinted	C. C. Finishes
Dado	Masonry	Primer Sealer	C. C. Dado Enamel	C. C. Dado Enamel
Machinery and Equipment		"Dulux" Machinery Finish Oxide Primer	C. C. Finishes	C. C. Finishes
Floor	No recommendation			
Piping	See Piping Chart, following Safety Color Code.			

RAG MILL

CALENDER ROOM—COATING ROOM—CUTTING ROOM—DUSTING ROOM—FINISHED PRODUCTS STORAGE—FINISHING ROOM—LABORATORIES—LIME STORAGE—OFFICES—RESIN SIZE—SIZE DRIER AREA—SORTING ROOM—STAIR WELLS—TOILETS—REST ROOMS

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Ceilings and Walls	Masonry	Primer Sealer	Mill White Undercoat	"Dulux" Mill White Gloss or Eggshell
Beams, Pillars	Steel	Submarine Primer	Mill White Undercoat	"Dulux" Mill White Gloss or Eggshell
Sash, Doors, Trim	Steel	Submarine Primer	Dado Enamel	*Dado Enamel
Sash, Doors, Trim	Wood	Primer Sealer	Dado Enamel	Dado Enamel
Dado	Masonry	Black Label Primer Sealer	Dado Enamel	Dado Enamel
Machinery and Equipment		"Dulux" Machinery Finish Oxide Primer	"Dulux" Machinery Finish	"Dulux" Machinery Finish
Piping		Submarine Primer	Paint with finishing materials specified above the same as the areas through which they pass; identify with "Safety Color Code" colors.	
Floors		No recommendation		

NOTE: The sections shown as Dusting Room, Lime Storage, Rosin Size Drier Area, Stair Wells, and Toilets when there is a Rest Room adjacent, should be finished out in the usual Finishes system using "Dulux" Mill Whites, or Color Conditioning, whichever is most adaptable to the area. These areas are generally "dry" and should offer no particular problem as far as moisture and condensation is concerned. The examination of the surfaces both masonry and steel, will determine in your mind just which product lends the greatest use in these areas.

BEATER ROOMS—BLEACHING ROOMS—RAG COOKING ROOMS—WASHING ROOMS

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Ceilings and Walls	Masonry	Primer Sealer	Mill White Undercoat	"Dulux" Mill White Gloss
Beams, Pillars	Steel	Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Sash, Doors, Trim	Steel	Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Sash, Doors, Trim	Wood	Primer Sealer	Acid Resisting Finish	Acid Resisting Finish
Dado	Masonry	Primer Sealer	Acid Resisting Finish	Acid Resisting Finish
Piping		Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Machinery and Equipment		Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Floors	No recommendation—Since these surfaces are subjected to abnormal conditions, there is no economy in painting them.			
Beaters & Beater Chests (Interior)		50/50 Mixture of 1865 Clear Brush Lacquer & 3600 Thinner		1865 Clear Brush Lacquer. This does not include copper lined equip. of this type

NOTE: (1) Chemical Resisting Finishes may be substituted for Alkali Resisting Finishes by specifying proper primer, intermediate coat, and top coat.

(2) Fumes and moisture prevalent in these areas attack paint films readily. It is essential that surfaces be protected with the type of finishes specified above in order to realize the proper return from the investment in maintenance painting.

(3) *Galvanized metal*—If any of the metal surfaces are galvanized, prime with "Galvanized Metal Primer," instead of the metal primer specified above.

(4) *Pipe identification*—To identify various pipe lines, paint nipples, elbows and couplings with the identifying color of the lines as per Safety Color Code. Piping generally should be painted the same as the area through which it passes, that is the same color, but through life long practice, it may be more economical to paint them with Acid Resisting Aluminum Paint than the finish coat adjacent to the area. But in any event, Safety Color Code identification should be used.

LAP PULP STORAGE & WET BASEMENTS

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Ceilings and Walls	Masonry	Primer Sealer	Mill White Undercoat	"Dulux" Gloss
Beams, Pillars	Steel	Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Sash, Doors, Trim	Steel	Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Sash, Doors, Trim	Wood	Primer Sealer	Acid Resisting Finish	Acid Resisting Finish
Dado	Masonry	Primer Sealer	Acid Resisting Finish or Dado Enamel	Acid Resisting Finish or Dado Enamel
Piping		Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Floors	No recommendations—Since these surfaces are subjected to abnormal conditions, there is no economy in painting them.			

NOTE: (1) A general moist condition prevails in these areas due to operations which warrant the use of moisture resisting finishes as specified above.

(2) *Pipe identification*—To identify various pipe lines, paint nipples, elbows and couplings with the identifying color of the lines as per Safety Color Code. Piping generally should be painted the same color as the area through which it passes, that is, the same color, but through life long practice, it may be more economical to paint them with Acid Resisting Aluminum Paint, than the finish coat adjacent to the area. But in any event, Safety Color Code identification should be used.

(3) If mildew is prevalent, specially treated finishes should be used, information about which will be supplied upon application.

CHLORINE BLEACH HOUSE

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Ceilings and Walls	Masonry	Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Beams, Pillars	Steel	Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Sash, Doors, Trim	Steel	Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Sash, Doors, Trim	Wood	Primer Sealer	Alkali Resisting Finish	Alkali Resisting Finish
Dado	Masonry	Primer Sealer	Alkali Resisting Finish	Alkali Resisting or Dado Enamel
Machinery and Equipment		Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Piping		Alkali Resisting Finish	Alkali Resisting Finish	Alkali Resisting Finish
Floors	There is no economy in painting these surfaces.			

NOTE: (1) Our Chemical Resisting Finishes may be substituted for above system by specifying proper primer, intermediate coat and top coat.

(2) The chemical fume conditions in this area are usually very severe and it is difficult to accomplish adequate surface preparation. The finishes specified above have a high degree of chemical resistance, but it may be necessary to recoat sooner than anticipated. It is suggested that these systems and others that may be offered, on inquiry, be tested.

(3) *Pipe identification*—To identify various pipe lines, paint nipples, elbows and couplings with the identifying color of the lines as per the Safety Color Code. Piping generally should be painted the same as the area through which it passes, that is, the same color, but through life long practice, it may be more economical to paint them with Acid Resisting Aluminum Paint, than the finish coat adjacent to the area. But in any event, Safety Color Code identification should be used.

MACHINE ROOMS

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Ceilings and Walls	Masonry	Primer Sealer	Mill White Undercoat	"Dulux" Mill White Gloss or C. C. Finishes
Beams, Pillars	Steel	Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Sash, Doors, Trim	Steel	Submarine Primer	Mill White Undercoater—Tinted	Color Conditioning Dado Enamel
Sash, Doors, Trim	Wood	Mill White Undercoater	Mill White Undercoater Tinted	Color Conditioning Dado Enamel
Dado	Masonry	Primer Sealer	Color Conditioning Dado Enamel	Color Conditioning Dado Enamel
Piping	See Piping Chart as per the "Safety Color Code."			
Floors	No recommendation—Since these surfaces are subjected to abnormal conditions, there is no economy in painting them.			
Machinery, except Paper Machines		Submarine Primer	Acid Resisting Finish	Acid Resisting Finish Machinery Colors

NOTE: (1) *Pipe identification*—To identify various pipe lines, paint nipples, elbows, and couplings with the identifying color of the line as per the Safety Color Code. Pipingh generally should be painted the same as the area through which it passes, that is, the same color, but through lifelong practice, it may be more economical to paint them with Acid Resisting Aluminum Paint, than the finish coat adjacent to the area. But, in any event, Safety Color Code identification should be used.

MACHINE ROOMS—PAPER MACHINE

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Fourdrinier		Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Drier Rolls		Submarine Primer	Acid Resisting Finish	Acid Resisting Finish
Hoods (Inside and Out)			Acid Resisting Aluminum Paint	Acid Resisting Aluminum Paint

NOTE: (1) If mildew is prevalent, specially treated finishes should be used, information about which will be supplied upon application.

(2) *Galvanized Metal*—If any of the metal surfaces are galvanized, prime with "Galvanized Metal Primer," instead of the metal primer specified above.

GENERAL EXTERIOR (ALL MILLS)

ALL TYPES OF MILLS

Surface	*Material*	*Primer*	*Undercoater*	*Finish Coat*
Buildings, Sash, Doors & Trim and Storage Tanks	Wood	Prepared Paint	Prepared Paint	Prepared Paint
Concrete and Brick Buildings	Masonry	Prepared Paint	Prepared Paint	Prepared Paint
Vomit Stacks	Wood	Barn & Roof Paint		Barn & Roof Paint
Vomit Stack Hoops	Steel	Acid Resisting Primer	Acid Resisting Finish	Acid Resisting Finish
Metal Stacks (Hot)			Heat Resisting Aluminum Paint or Stack Black Heat Resisting	Heat Resisting Aluminum Paint or Stack Black Heat Resisting
Sash (Steel), Storage Tanks (Steel), Metal Piping & Ducts, Structural Steel		Acid Resisting Primer	"Dulux" Metal Protective Finish or Acid Resisting Finish	"Dulux" Metal Protective Finish or Acid Resisting Finish
Galvanized Metal		Galvanized Metal Primer	"Dulux" Metal Protective Finish or Acid Resisting Finish	"Dulux" Metal Protective Finish or Acid Resisting Finish

NOTE. (1) In addition to general exterior exposure, these surfaces are subjected to fumes resulting from paper manufacture. Generally the fumes are not destructive as to warrant deviation from the painting specifications prescribed. If so, Acid or Alkali Resisting Finishes are preferable on the exposed steel and other metal surfaces. This includes galvanized metal as well.

(2) *Galvanized metal*—If any of the metal surfaces are galvanized, prime with "Galvanized Metal Primer," instead of the metal primer specified above.

Exterior steel frame work, particularly coal hoists, may be subjected to both acid and alkali fumes as discharged through the various vomit stacks, depending on the mill which you are surveying. Do not expect any of our finishes to withstand this action, particularly with coal dust and screenings falling over the structure, which in a sense acts as an abrasive, removing very slowly, the paint film along with the actions of the acid and alkali fumes present in the discharging moist vapor. Test indicates that Submarine Primer followed by either the red or the black Acid Resisting Finishes performs the best. Do not expect "Dulux" Metal Protective Finish to hold up here, unless you can give it a week's drying time prior to any use of the structure or the discharge through vomit stacks.

WATER WHEELS & TAINTER GATES—ALL TYPES OF MILLS

Surface	*Primer*	*Undercoater*	*Finish Coat*	*Color*	*Remarks*

These structures, after thorough cleaning and wire-brushing, should be spotted in with Submarine Primer. A full coat of Submarine Primer should then follow over all. Three coats of Alkali Resisting Finish should be applied to complete the system. The protective value of this system is greatly enhanced if the film is allowed to harden for a week before these surfaces are submerged in water.

NOTE: Chemical Resisting Finishes also may be used. Both systems should be tested before adoption.

Protective Packaging with Molten Thermoplastics

WILLIAM RABAK
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Owing to variations in chemical and physical characteristics, thermoplastic materials vary in their protective effects. For example, refined paraffin is a very effective moisture barrier at ordinary temperatures but at low temperatures it becomes brittle, cracks, and loses its effectiveness under normal conditions of handling and shipping. However, another type of refined paraffin, i.e., the low melting point soft microcrystalline paraffins manifest excellent low temperature flexibility and at the same time are equally effective as moisture barriers. Their flexibility is improved with plasticising agents, such as certain of the polyisobutylenes, crepe rubber and other compounds, resulting in coatings which are reasonably flexible and tough at low temperatures. These modified soft microcrystalline paraffins have been found to possess other unusual low temperature adhesion and expansion characteristics which make them suitable for the dip-coating of frozen commodities per se, such as frozen poultry or meat, or of the packages containing frozen foods. As the result, dip-coatings of this type have been in commercial use since 1946 by a large segment of the frozen food locker plant industry.

Excerpts from a paper presented to Packaging Conference of the American Management Assn., N. Y. at the Navy Pier, Chicago, Ill., April 24-27, 1950.

It appears that the use of thermoplastic dip-coatings for frozen foods dates back to 1941 when I began preliminary experiments to determine the practicality of this method. A general statement on the results of this work was published in 1942 and this report was presented at the national meeting of the Institute of Food Technologists at Minneapolis, Minnesota, in June of that year. *(2)*

This work was in part instigated by the knowledge that heat sealing operations of protective sheet materials often caused a change in the characteristics of many widely utilized coatings resulting in the impairment of efficiency at the point of sealing. *(3)* It was therefore reasoned, that if a water-vapor and air-resistant thermoplastic material could be utilized as a dip-coating, the weaknesses inherent to heat sealing could be eliminated.

The soft microcrystalline paraffins were found to supply a base material which was sufficiently flexible to resist cracking under these conditions. Due to comparatively low melting points, these hydrocarbons are "tacky" at 70°F. or above. However, at temperatures below 32°F. they become tough and firm and the tackiness recedes in proportion to the depression in temperature. Undue tackiness is also easily prevented by spraying the dip-coated item under controlled conditions, with a thin coating of clear lacquer, which also serves to enhance the finish and appearance. When mixed in correct proportions with certain compatible modifying compounds previously mentioned, the resulting blends have general characteristics which are satisfactory over a wide range of temperature. They meet the requirements for food products in that they are nontoxic, insoluble, and have no taste or odor. The attractiveness of hydrocarbon coatings such as these, may be materially increased by coloring the melt with oil-soluble permitted food dyes. This feature is valuable for identification or trade-mark purposes and in no way impairs the functional value of the coating.

Brittleness of coatings, being a major pitfall at lower temperatures, must be specifically evaluated. [1] While many laboratory tests have been devised to determine relative flexibilities of materials, a practical method such as the impact or drop test is a convenient and reliable way of testing this characteristic.

Since continuity of the surface film is more important than thickness of coating, it was found advantageous to strive for thin coverings. Coating thickness may be regulated by, first, the temperature of the molten thermoplastic, second, the timing of the "dwell" of the dip and, third, by repetitive immersions. A dipping temperature maintained at + or — 15°F.

above the melting point of the thermoplastic usually results in the deposition of a suitably uniformly thin film after immersion for one second. Should bare spots remain, a second dip may be necessary. Coatings over 2 millimeters thick (0.0078 inches) are undesirable because of decreased flexibility and unjustified increase of the cost factor. In the absence of "bare" spots, coatings 0.5 mm. thick were found to be effective in water-vapor and gas resistance.

Coatings are easily removed from the dip-coated items by peeling or "stripping." In the case of frozen commodities slight thawing develops a film of water between the coating and the frozen material which serves as a lubricant enabling the easy removal of the covering in cast formation.

Mechanization is an important factor which must be given careful consideration if the package is to be utilized by industry. During the war, the armed forces used a type of dipping mechanism which involved the passage of the containers or commodities through a molten bath of the thermoplastic on a chain. A more recent proposal has been the use of a type of equipment used in the confectionery and allied industries, which is known as an "enrober," so-named because the commodity to be coated is "enrobed" by a molten sheet of the coating applied through a slot from above a moving belt. With the enrober, thickness and evenness of the coating may be regulated by blasts of hot air applied from appropriate angles and hardening may be expedited by passage through a refrigerated cooling tunnel.

A recently completed packaging study carried out at the Western Regional Research Laboratory permitted accurate evaluation of dip-coated paperboard containers in connection with the packaging of frozen foods. The containers were of the end opening type having a capacity of twelve ounces. After filling with frozen peas, the end flaps were anchored with microcrystalline paraffin. The closed cartons were then hand-dipped in a paraffin-base thermoplastic under controlled conditions resulting in the deposition of a reasonably uniform surface coating 1½ to 2 millimeters thick. These containers were then stored in dry circulating air at 15° and 0°F. in specially designed sealed cabinets. Only insignificant weight losses occurred over a two year storage period at either temperature indicating the efficiency of this type of barrier. Further corroboration of the protection afforded these frozen peas by the dip-coated container was verified by standardized taste panel tests.

While this presentation has been more or less confined to the hydrocarbon type of thermoplastic, it should be emphasized that this is only one of many types which are amenable to the dip-coating procedure. Any thermoplastic compound having protective chemical and physical characteristics which meet the requirements of any specific product may be utilized.

Therefore, it is of prime importance that the type of thermoplastic coating selected for a given commodity be tailored to the requirements of that product. The possibilities are legion. Only the surface has been scratched in this new but promising field of protective packaging.

Patent Abstracts

● ***In addition to abstracts on the technology of pulp, paper and related industries, miscellaneous abstracts which may provide useful information are included.***

United States

2,514,503 — Method of Bleaching Moist Felted Groundwood Pulp. Robert L. McEwen, Williamsville, and Fred R. Sheldon, Buffalo, N. Y., assignors to Buffalo-Electro Chemical Company, Inc., Buffalo, N. Y., a corporation of New York. Filed July 30, 1947—Issued ??? .. ....

In the method of treating moist felted wood pulp containing substantial amounts of ligneous and non-cellulosis materials having a consistency of not less than 25% solids, the steps which comprise impregnating said moist felted pulp with an alkaline peroxide solution as the sole chemical addition to effect self controlled bleaching of the pulp, said alkaline peroxide solution having a pH of from 9.5 to 11 and a total alkalinity of from 0.35 to 1.1% by weight sodium oxide equivalent based on bone dry pulp and comprising a peroxide and an alkaline salt including as an essential ingredient a sodium salt selected from the group consisting of silicate of soda, trisodium phosphate, sodium pyrophosphate and sodium tetraphosphate, accumulating said impregnated felted pulp into a mass of substantial volume and having a relatively small exposed area to inhibit drying out of said mass, allowing said mass to remain in a moist felted condition for from 5 hours to several weeks during the initial period of which time the maximum brightness of the pulp is achieved and the pH thereof is automatically lowered to at least 8 at the point of maximum brightness, and omitting any further chemical additions to the bleached pulp to inhibit color reversion thereof after obtaining said maximum brightness, the bleached pulp retaining substantially its said maximum brightness for a period of at least several weeks.

2,514,508 — Corrosion Prevention. Leslie G. Nunn, Jr., Tulsa, Okla., assignor to Standard Oil Development Company. Filed April 5, 1947—Issued July 11, 1950.

A method for inhibiting corrosion of ferrous metal in contact with an aqueous fluid containing hydrogen sulphide which comprises incorporating in the aqueous fluid a urea formaldehyde condensation product which is at least capable of being colloidally suspended in said aqueous fluid, said condensation product being used in a small but sufficient quantity to inhibit said corrosion.

2,514,547 — Jordan Plug. Dwight E. Jones, Pittsfield, Mass., assignor to E. D. Jones & Sons Company, Pittsfield, Mass. Filed September 27, 1945—Issued July 11, 1950.

A plug for a Jordan or the like comprising in combination, a body in the form of a cone an outer surface tapering from a small to a relatively larger end and said surface provided with cutter bar slots and banding grooves, said bar slots formed in and extending longitudinally of the body and being circumferentially spaced thereabout, said banding grooves intersecting said bar slots and being continuous and extending circumferentially of the body and being spaced longitudinally thereof and having flat bottoms disposed in parallelism with the longitudinal axis of the body and provided with spaced opposite sides spaced longitudinally of the body and disposed at right angles to said axis, substantially flat and relatively rigid inner band members extending around said grooves having inner surfaces and opposite sides contiguous with the bottoms and opposite sides thereof, outer banding in said grooves including a member having a plurality of continuous uninterrupted convolutions served under tension about said inner band member with outer convolutions thereof abutting opposite sides of the grooves and having an outer end portion secured to said convolutions, and single cutter bars in and filling said slots having openings spaced along their inner edges formed to provide lips extending towards the larger end of the body engageable with inner sides of said inner band members, all adapted and arranged whereby the inner band members and outer bandings are held against axial movements relative to the body by the opposite sides of the grooves and the bars are held in their slots against radial movement by the lips thereof in engagement with the inner band members.

2,514,864—Static Charge Eliminator. William Charles Herbert, Brooklyn, and William Charles Herbert, Jr., Freeport, N. Y. Filed November 15, 1946—Issued July 11, 1950.

A static eliminator comprising a hollow exterior insulator bar having an insulated conductor member therein, a tubular insulator sleeve in said bar enveloping said conductor, said bar enveloping said member and said sleeve over substantially the full length of the eliminator, electrodes mounted on the bar and projecting to the outside thereof, said member projecting from one end of said bar, a head having a recess receiving said end, a bore extending from the inner end of said recess, a metallic lining in said bore into which said conductor is inserted, and a metallic stud in said head extending transversely of said bore, and connected to said sleeve at its inner end.

2,515,095—Process of Fractionating Starch. Thomas John Schoch, La Grange, Ill., assignor to Corn Products Refining Company, New York, N. Y. Filed May 15, 1947—Issued July 11, 1950.

The process of fractionating starch into its A- and B-fractions which comprises effecting a solution of starch, at elevated temperature, in a mixture of water and aliphatic alcohol, cooling the solution to a sufficiently low temperature to effect precipitation of the A-fraction, separating the A-fraction, cooling the solution remaining after removal of A-fraction to a sufficiently low temperature to effect precipitation of the B-fraction and separating the B-fraction; said alcohol containing from 1 to 5 atoms of carbon and capable

of being dissolved in the aqueous phase of said mixture to the extent of about 10 to 15 volume per cent at 0° C. and being present in the system to the extent of about 10 to about 35 per cent of the volume of said mixture; the concentration of starch in said solution not exceeding about 7 per cent.

2,515,166 — Discharge Hopper. George R. Wadleigh, Hastings on Hudson, N. Y., assignor of one-half to West Virginia Pulp and Paper Company, New York, N. Y. Filed April 27, 1946—Issued July 11, 1950.

A discharge hopper for pulp wood sticks and material of like shape adapted to have same dumped therein helter-skelter and to deliver the individual sticks lengthwise and in parallel relationship one to the other, said hopper being comprised of opposite walls inclined one to another and forming at their point of closest approach a discharge aperture narrower than the length of a wood stick, one of said walls making a comparatively small angle with the horizontal whereby it acts as a receiving platform for the material to be handled, the other of said walls being constituted by an endless traveling apron against which the wood is partially supported, said traveling apron making a comparatively slight angle with the vertical, and a conveyor beneath said aperture to receive sticks discharged therethrough.

Canadian

466,610—Process of Utilizing Waste Liquors. Hilding Olof Vidar Bergstrom, Stocksund, Sweden, and Karl Gustaf Trobeck, Stockholm, Sweden. Filed May 26, 1943—Issued July 18, 1950.

A process of utilizing waste cellulose liquors comprising subjecting the liquor to evaporation in at least two steps, the concentration of the liquor in the last step being conducted under super-atmospheric pressures and being carried to a solids content of about 80 to 95 per cent so that the liquor will assume a solid state at normal temperature, ejecting said liquor in a finely divided state from the last step of evaporation, while at a temperature of about 180° to 220°C. and while under super-atmospheric pressure, under release of pressure so that flash drying takes place and collecting the resulting dry porous product thus received.

466,672—Method of Manufacturing Moulded Pulp Articles. Merle P. Chaplin, South Portland, Maine, U.S.A., assignor to Chaplin Corporation, Portland, Maine, U.S.A. Filed April 13, 1949—Issued July 18, 1950.

The herein-described method of forming moulded pulp articles which comprises suction forming an article in one position, inverting the formed article and bringing it into a substantially horizontal position of rest, raising the article vertically, moving the article laterally while maintaining it in its inverted horizontal position into axial alignment with a temporarily stationary drying die, then lowering the article vertically toward the drying die and depositing the article onto the drying die.

466,687—Glue Control for Bag-Sealing Machines. Helmer Anderson, Minneapolis, Minnesota, U.S.A., assignor to General Mills, Inc., Minneapolis, Minnesota, U.S.A. Filed October 1, 1946—Issued July 18, 1950.

A glue feeding control for a bag closing and sealing machine comprising a glue applying device, a valve controlled air pressure means operatively connected to the glue applying device to control the flow of glue, a solenoid operatively associated with the valve to open and close same, a switch for controlling the electrical power supply to the solenoid, and a governor operably connected to a moving element of the machine and operably associated with the switch to operate same at predetermined speeds of the machine to cause the solenoid to operate the air valve to start and stop the flow of glue at said predetermined speeds.

A glue feeding control for a bag closing and sealing machine having a sealing means including a glue applying device with an air supply line to cause the glue to feed, the control comprising a valve in the air supply line, a solenoid operatively connected to the valve, a switch connected to the solenoid to control same, and a flyball governor mounted on a shaft of the sealing machine and operably associated with the switch to operate same at predetermined speeds to cause the solenoid to open and close the air valve controlling glue application.

466,720—Stock Inlet. Gleb I. Goumenouk, Powell River, British Columbia, Canada, assignor to Powell River Company Limited, Vancouver, British Columbia, Canada. Filed February 11, 1948—Issued July 18, 1950.

A stock inlet for paper-making machines comprising a closed pond chamber, a deceleration section extending upwardly to the chamber at one side thereof, an acceleration section extending downwardly from the chamber at its opposite side, a slice at the lower end of the acceleration section and means for supplying stock to the lower end of the deceleration section.

Analysis of Pulp and Paper Industry and the Raw Material Supply by K. G. Scheye was concluded in the July 20th issue.

Several have requested reprints of the complete series. Cost $2.

Please get your order in if interested.

SUPPLIERS

Atlas Powder Co. has announced expansion of the sorbitol plant capacity at Atlas Point, Wilmington, Del. Capacity of the sorbitol units will be increased by nearly 50 percent and the new increased production will start about October 1, 1950.

E. I. du Pont de Nemours & Co. announces that Alexander J. Wuertz of Kennett Square, Pa., chemist, has retired after more than 31 years with the company, and, on September 15, he will take charge of the plant safety program of the Manufacturing Chemists Association with headquarters in Washington.

J. O. Ross Engineering Corp. have moved their offices to 444 Madison avenue, corner of 50th street, New York. The telephone number is PLaza 9-3353.

Shartle Bros. reports the recent return from Europe of Otto W. Hein, production manager. Mr. Hein spent about two months at the B-C-I office in London and the factory at Newport, England. His efforts were largely directed towards the introduction of American techniques to expedite the production of Black-Clawson, Shartle, Dilts equipment. The foundry at Newport is equipped to produce castings of iron, steel, stainless, brass and aluminium.

A. E. Staley Manufacturing Co., corn and soybean processor, has announced plans for the construction at Painesville, Ohio, of a modern soybean processing plant with a daily capacity of 10,000 bushels.

The new plant will use the solvent extraction process, most efficient known in the industry, and will replace an older expeller plant which the company has operated at Painesville since 1939. It will have 25 percent more capacity than the existing facilities.

Pointing out that soybeans are currently the nation's largest single source of vegetable oil, Staley officials said the company's decision to modernize its Painesville facilities was based in part on Ohio's development as a major soybean grower.

Ohio ranked fourth among the states last year as a soybean grower with a harvest of 20½ million bushels, and the U. S. Department of Agriculture has forecast a 1950 harvest of 23½ million bushels. A record national soybean harvest of nearly 271 million bushels has been forecast by the USDA this year.

The Staley company has been processing soybeans at Decatur since 1922.

Stauffer Chemical Co. announces that construction of a new research and development laboratory at Dobbs Ferry, N.Y., will get underway at once. When completed, the building will house the research staff of the company's Eastern Division now scattered at several locations in and around New York City. Stauffer's Chauncey plant is located across the Parkway and will furnish facilities for pilot plant testing of products and processes developed at the new lab. The location permits the staff convenient access to New York City technical libraries and to Stauffer's general offices.

Warren Steam Pump Co., Inc., announces that negotiations have been concluded for the purchase of Quimby Pump Division of H. K. Porter Co., Inc., Pittsburgh, Pa. Formal papers are being processed by counsel of both parties.

Frederick Wierk, consulting engineer, announces the establishment of an office at 220 East 42nd street, New York 17, N.Y. Phone: MUrray Hill 2-8598-9.

Miller and Carman Return

William B. Miller, mining geologist, and John S. Carman, mining and industrial engineer, representing Clyde H. Shoemaker Associates, Consulting Mineral Engineers, New York report a happy landing after examining industrial mineral deposits in Ecuador. Fibre Engineering & Machinery Co. are manufacturing consultants for this Pan-American project.

FINANCIAL

Eddy Paper Corp. announced a dividend of $5 on the common, payable on September 15.

Mersey Paper Co., Ltd., has declared a dividend of $1 per share on common, payable October 2 to stockholders of record September 16.

Marathon Corp. and its subsidiaries report consolidated net earnings in the nine months ended July 31, 1950, were $4,476,592 after income tax provisions, compared with $3,390,857 in the corresponding nine months of the preceding fiscal year.

After preferred stock dividend requirements, the nine-month earnings were equal to $3.31 a share on the company's common stock, compared with $2.47 a share a year before.

Net sales in the period were $47,923,786, as against $43,865,183 in the corresponding nine months of the preceding year.

Powell River Co., Ltd., has declared a dividend of 50c per share, payable September 15, ex-coupon September 14.

Puget Sound Pulp and Timber Co., Comparative Operating Summary:

	January-June		
	1950	*1949*	*1948*
Net sales and other income	$6,208,899	$5,248,623	$10,332,274
Cost of sales and other expense	4,634,212	3,799,110	5,127,850
Profit before depreciation	1,574,687	1,449,513	5,204,424
Depreciation	305,760	262,539	232,773
Profit before Federal tax provision	1,268,927	1,186,974	4,971,651
Provision for Federal income taxes	482,192	451,050	1,889,227
Net profit from operations	786,735	735,924	3,082,424
Net capital gain[1]	131,218	131,218	131,218
Net income for six months	917,953	867,142	3,213,642
Preferred dividend requirement	[2]	[2]	[2]
Net income applicable to common stock		867,142	3,213,642
Earnings per common share[3]			
Operating profit	$1.01	$0.94	$3.96
Net capital gain[1]	.17	.17	.17
Total	$1.18	$1.11	$4.13

[1] Net capital gains were derived from instalment payments received in 1947, 1948, 1949 and 1950 from sale of Canadian timber properties; additional payments are receivable annually in the second quarters of 1951-1954.

[2] All outstanding preferred stock was converted into common stock during 1947, or redeemed as of January 1, 1948.

[3] For comparative purposes, common share earnings and dividends in 1948 and earlier years have been restated, giving effect to a 2-for-1 split completed July 15, 1948.

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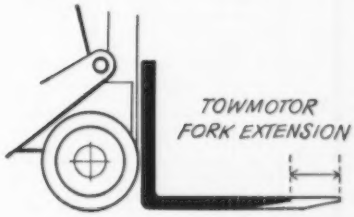

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FINANCIAL RECORD

PREFERRED STOCKS	Per Share Earnings: Calendar Year 1949	Per Share Earnings: 12 Mo. to Approx. 6/30/50	Indic. Annual Divid. Rate	Aug. 22 Approx. Market Price
Armstrong Cork Co. $3.75 Cum.	$40.95*	$ —	$3.75	$101½
Armstrong Cork Co. $4.00 Cum. Conv.	40.95*	—	4.00	112½
Celotex Corp. 5% Cum.	6.80c	8.27g	1.00	16⅝
Champion Paper & Fibre $4.50 Cum.	60.09f	89.39	4.50	104¼
Container Corp. of Amer. 4% Cum.	89.52	104.60	4.00	102½
Crown Zellerbach $4.20 Cum.	54.38c	55.88g	4.20	104½
Dixie Cup Co. $2.50 Cum. Conv. Cl. A	10.93	12.14	2.50	51¼
Flintkote Co. $4 Cum.	62.70	71.81	4.00	108½
Robert Gair Co., Inc. 6% Cum.	13.79†	15.86†	1.20	17⅝
International Paper Co. $4 Cum.	224.55	264.19	4.00	108½
Kimberly Clark Corp. 4½% Cum.	85.27	99.12e	4.50	106
Kimberly Clark Corp. 4% Cum. Conv. 2nd	50.65*	58.80e	4.00	152
MacAndrews & Forbes 6% Cum.	61.59	62.97	6.00	141½
Mead Corp. 4¼% Cum.	51.37	82.87a	4.25	92¼
Mead Corp. 4% Cum. Conv. 2nd	21.35*	27.76a	2.00	50
Paraffine Cos. Inc. 4% Cum. Conv.	56.46	47.70e	4.00	99
Rayonier Inc. $2 Cum.	9.54	10.03e	2.00	34½
St. Regis Paper Co. 4.40% 1st A	30.74	36.61	4.40	93¾
Scott Paper Co. $3.40 Cum.	51.15*	62.16*	3.40	99⅜
Scott Paper Co. $4.00 Cum.	51.15*	62.16*	4.00	107¼
Sutherland Paper 4½% Conv.	46.92	59.24	4.25	114
U. S. Gypsum Co. 7% Cum.	283.37	340.24	7.00	187½
United Wallpaper Inc. 4% Cum. Conv.	2.14	(d)8.00e	2.00	24¼
West Virginia Pulp & Paper 4½% Cum.	61.28c	61.06i	4.50	109¼
COMMON STOCKS				
APW Products Co.	(d)0.81	(d)0.01	—	4¾
American Writing Paper Corp.	.04	0.50	—	7⅛
Armstrong Cork Co.	6.57	—	$3.00	43¼
Celotex Corp.	1.65c	2.06g	1.00	15⅜
Certain-Teed Prods. Corp.	2.84	3.24	1.00	14¾
Champion Paper & Fibre	5.15f	8.16	2.00	40⅜
Congoleum Nairn Co.	3.04	2.70	2.00	22⅞
Container Corp. of America	8.46	9.62	4.00	50
Crown-Zellerbach	6.02c	6.12g	2.00	37½
Dixie Cup Co.	7.44	8.58	1.54	43⅞
Eastern Corp.	0.04	1.64	(h)	15⅜
Flintkote Co.	4.33	4.95	2.50	26
Robert Gair Co., Inc.	2.11†	2.30†	0.70	8¾
Great Northern Paper Co.	4.87	3.75	2.80	43⅝
International Paper Co.	7.12	8.14	2.50	56⅞
Johns-Manville Corp.	4.83	6.16	2.50	41¼
Kimberly Clark Corp.	5.29	6.19e	1.80	37½
MacAndrews & Forbes Co.	3.64	3.77	3.00	38
Marathon Corp.	3.29c	3.56g	1.40	32⅜
Mead Corp.	4.10	5.57a	1.60	25¼
National Container Corp.	0.95	1.34	0.60	9⅛
Paraffine Cos. Inc.	0.85	0.71e	0.60	15¼
Rayonier, Inc.	4.75	5.06e	2.00	39¼
Ruberoid Co.	8.72	9.06	3.25	48¼
St. Regis Paper Co.	0.91	1.11	0.60	9⅛
Scott Paper Co.	6.07	7.38	3.60	43¼
Sutherland Paper Co.	4.62	5.64	2.50	43⅞
Union Bag & Paper Corp.	5.01	5.16	2.25	33¼
United Board & Carton	(d)1.61b	(d)0.84g	—	11¾
U. S. Gypsum Co.	13.51	16.29	9.00	104
United Wallpaper	(d)0.01	(d)0.32e	—	2⅞
West Virginia Pulp & Paper	8.58c	8.36i	3.00	60¼

(a) 12 months to approximately 6/15/50
(b) Year ended 11/13/49
(c) Year ended 1/31/50
(d) Deficit
(e) 12 months to 3/30/50
(f) 9 months to 12/31/49
(g) 12 months to approximately 4/30/50
(h) Declared 25c payable Sept. 1, 1950.
(i) 12 months to 7/31/50
(*) Earnings per combined preferred shares.
(†) Includes domestic and Canadian subsidiaries and 60% equity in Southern Paperboard Corp.

National Container Corp. and its subsidiaries report consolidated sales and profits for the periods indicated.

	Second Quarter		First Half	
	1949	1950	1949	1950
Consolidated net sales	$7,096,664.48	$9,482,760.35	$14,628,098.43	$18,265,897.75
Consolidated net profit after all charges	553,280.48	918,058.97	1,138,605.06	1,854,026.11
Number of common shares outstanding at end of period	2,715,459.00	2,742,032.00	2,715,459.00	2,742,032.00
Net Profit per share	$ .21	$ .34	$ .42	$ .68

As of August 1, 1950, all Common Stock Purchase Warrants not theretofore exercised expired. There are presently outstanding 2,753,366 common shares.

PRICES

The prices below reflect general market quotations at the mill level on the standard grades in which the normal volume of business is being done. Does not include occasional spot offerings.

NEW YORK
Delivered Ports

Standard News, per ton—

Rolls, contract	$100.00/	—
Sheets	115.00/	—

F.o.b. Mills. Carload freight allowed, dock N. Y.

Kraft— per cwt., 40# base wgt.

Standard Wrapping Rolls	$6.75/$7.00
No. 1 Wrapping Rolls	7.50/ 8.00
Standard Bag	6.50/ 6.75

Tissues—per ream 24x36 (480) 10 lbs. 2500 lbs. or more

Wh. No. 1 Frd.	‡ $1.40	/ 1.55
Wh. No. 1 MG	‡ 1.40	/
Wh. No. 1½	‡ 1.30	/ 1.35
Wh. No. 2	‡ 1.15	/ 1.20
Kraft Non-Tar	‡ 1.25	/
White Non-Tar	‡ 1.52½	/

‡ Pricelists withdrawn by mills.

Toilet— per case of 100 rolls—1 M sheets

Unbleached 4½x4½	$5.90/	—
Unbleached 4½x5	5.85/	—
Bleached 4½x4½	7.10/	—
Bleached 4½x5	8.80/	—

Per Case of 50 rolls—2000 sheets

Unbleached 4½x4½	$5.90/	—
Bleached 4½x4½	6.95/	—

Per Case of 100 rolls—1000 sheets

Facial, 4½ x 5, 2 ply	$8.95/$9.45

Paper Towels—per case of 3750.

Wh. Jr. M'tif'd 9¼x9½	$5.25
Br. Sr. M'tif'l 10x12	3.60
Br. Jr. M'tif'd 9½x9¾	3.10
Br. Jr. Sgl. fold 10x10¾	3.15
Blchd. 7½ x 11, 24/25 rolls	$3.95/$6.25

Manila, per cwt.

No. 1 Jute Tag sheets*	$15.55/$17.55	
Reg. Jute M.F. 40-lb., sheets*	14.00/	16.00
Wrapping Manila	8.75/	10.50
Printing Manila	10.00/	11.00

* Less usual allowance for rolls.

WORLD WOOD PULP MARKETS
Third Quarter Contract Price, Per Short Air-Dry Ton

	Delivered, with varying freight allowance		On dock Atlantic Ports		
	U. S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$65.00/ 68.00	65.00/ —			
Sideruns Pulping News	$65.00/ —	65.00/ —			
Soda, Bleached	120.00/122.00	122.00/ —			
Sulphate, Bleached	122.00/143.00	131.00/ —	*130.00/137.00†		*129.90/ —
Sulphate, Unbl'd North'n		95.00/105.00	*90.00/ 97.50†		
Sulphate, Unbl'd South'n	90.00/ 95.00			* In Competitive range	Competitive
Sulphite Blchd. (S'ftw'd)	122.00/125.00	125.00/ —	*125.00/128.00†		
Sulphite, Blchd. (H'dw'd)	120.00/ —				
Sulfite, Semi-blchd.	112.00/ —				
Sulphite, Unbleached		107.00/ —	107.00/110.00†		
Sulphite, Unbl'd (Glassine)		110.00/ —	111.00/ — †		

* On dock. † Delivered.

Gummed Tape—per bdl., 500 bdls. or more.

90-lb. 375 ft. GSI	$5.70/ —
60-lb. 600 ft. GSI	5.70/ —
35-lb. 800 ft. GSI	6.54/ —
35-lb. 500 ft. GSO	4.89/ —

Boards, per ton—*

Filled News	‡
Plain Chip	‡
Blchd. Mla L-d. Chip	‡ 110.00/125.00
White Pat. Coated .020	‡ 127.50/130.00
Kraft Liners 42 lb.	105.00/ —
Kraft Corr. .009	110.00/ —
Binders Boards	120.00/124.00

‡ Pricelists withdrawn by mills.

The following prices are representative distributors' resale prices:

Rag Content Bonds and Ledgers—
White, 20 lb.

Bonds	4 Ctns. per cwt.
100% Rag Ex. No. 1	‡ $57.55/$59.45
100% Rag	50.65/ —
75% Rag	39.20/ 39.30
50% Rag	32.35/ —
25% Rag	27.70/ —

Ledgers	4 Ctns. per cwt.
100% Rag Ex. No. 1	$60.15/ —
100% Rag	51.90/ —
75% Rag	40.45/ 40.55
50% Rag	32.35/ 33.65
25% Rag	29.00/ —

Sulphite Bonds and Ledgers
White, 20 lb.

Bonds	4 Ctns. per cwt.
Watermarked	‡ $18.15/$19.00
Plain	‡ 17.10/ 17.45

Ledgers	4 Ctns. per cwt.
Watermarked	‡ $20.15/$20.30
Plain	‡ 18.55/ 18.60

White Book

Conversion Coated	Case per cwt.
No. 1	‡ $21.65/$21.75
No. 2	‡ 20.15/ 20.40
No. 3	19.65/ —
Machine Coated	
No. 1	$16.90/ 17.15
No. 2	14.90/ 15.15
Uncoated	
No. 1 Antique (Watermarked)	$17.15/ 18.65
Offset	16.15/ 16.90
A Grade E. F.	16.15/ —
A Grade S. C.	16.65/ 16.90
B Grade E. F.	15.40/ —
B Grade S. C.	16.15/ —

‡ Indicates a price change.

WASTE PAPER MARKET

The following quotations were gathered from major dealers in each market. They are an indication of the price range in which volume tonnage was moving on the date specified. Spot offerings or special packings are not necessarily included. Prices to mills, per ton, f.o.b. cars shipping point (includes brokers' fee.) ALL PRICES NOMINAL.

	New York Aug.18	Philadelphia Aug. 10	Boston Aug.18	Chicago Aug.18
No. 1 Mixed Paper	$16.00/ 18.00	$16.00/ 18.00	$16.00/ 17.00	$17.00/ —
Boxboard Cuts	14.00/ 20.00	16.00/ 18.00	14.00/ —	21.00/ —
Mill Wrappers	20.00/ 29.00	28.00/ 30.00	17.00/ —	19.00/ —
No. 1 News	21.00/ 24.00	21.00/ 23.00	21.00/ 22.00	25.00/ —
Over-issue News	25.00/ —	26.00/ 28.00	17.00/ 20.00	28.00/ —
Corrugated Containers	35.00/ 37.00	32.00/ 35.00	32.00/ 35.00	35.00/ —
New Corrugated Cuts	28.00/ 40.00	35.00/ 40.00	35.00/ 40.00	40.00/ —
Double Kraft Ld. Corr. Cuts	55.00/ —	55.00/ 58.00	45.00/ 60.00	60.00/ *
Used Kraft Bags	42.50/ —	55.00/ 58.00	40.00/ —	40.00/ —
No. 1 Brown Kraft Paper	42.50/ —	45.00/ 50.00	45.00/ —	40.00/ —
Super Resorted Br. Kraft	50.00/ —	55.00/ 60.00	50.00/ 60.00	50.00/ —
New Br. Kraft Env. Cuts	90.00/ —	80.00/ 85.00	85.00/ 100.00	75.00/ —
New Br. Kraft Cuts	58.00/ 65.00	75.00/ 80.00	60.00/ 75.00	70.00/ —
No. 1 Gtwd. Shvs.	35.00/ —	35.00/ 45.00	40.00/ —	35.00/ —
White Newsblanks	60.00/ 63.00	60.00/ 65.00	55.00/ 65.00	50.00/ —
No. 1 Flyleaf Shvs.	45.00/ —	45.00/ 50.00	50.00/ —	50.00/ —
No. 1 Soft Wht. Shvs.	100.00/115.00	110.00/120.00	90.00/105.00	90.00/ —
Super Soft Wht. Shvs.	125.00/127.00	120.00/130.00	100.00/115.00	100.00/ —
Hd. Wht. Shvs.	120.00/130.00	135.00/140.00	120.00/135.00	115.00/ —
Hd. Wht. Env. Cuts	140.00/150.00	150.00/165.00	140.00/150.00	125.00/ —
New Manila Env. Cuts	80.00/ 90.00	nominal	80.00/ 90.00	70.00/ —
Col. Tab Cards	55.00/ —	55.00/ 65.00	50.00/ 55.00	45.00/ —
Manila Tab Cards	85.00/ —	110.00/120.00	90.00/100.00	85.00/ —
No. 1 Mixed Ledger	50.00/ —	50.00/ 55.00	45.00/ 55.00	45.00/ —
White Ledger	65.00/ 70.00	70.00/ 75.00	65.00/ 75.00	60.00/ —
Mixed Books & Mags.	20.00/ —	30.00/ 35.00	25.00/ 30.00	20.00/ —
No. 1 Rep'd Hvy. Books & Mags.	35.00/ —	40.00/ 45.00	40.00/ —	33.00/ —

* f.o.b. or delivered.

Rag Market

New Domestic Cotton Cuttings
(Prices to Dealers, F.o.b. Ship. Pt.)
ALL PRICES NOMINAL

White Shirt	$13.00/$14.50
Unbleached Muslin	13.25/ 14.25
Light Silesias	8.00/ 9.00
White Block Blue Overalls	9.00/ 10.00
Blue Overalls	5.00/ 5.25
Fancy Shirt	5.00/ 5.50
Percales	6.50/ 7.50
Light Prints	6.00/ 6.75
No. 1 Washables	3.50/ 3.75
Bleachable Khaki	8.00/ —
Unbleachable Khaki	5.00/ —
Cottonades	4.25/ 4.75
Lt. Flannelettes	8.50/ —
Men's Corduroy	5.75/ 4.25
Women's Corduroy	4.00/ 4.25
Canton Flannels, Blchd.	12.00/ —
Underwear Cutters, Blchd.	12.00/ 14.00
Underwear Cutters, Unblchd.	13.50/ 14.50

Old Domestic Cotton Rags
(Prices to Dealers, F.o.b. Ship. Pt.)
ALL PRICES NOMINAL

	Per 100 lbs.
Mixed White	$3.25/ $4.50
Cotton Pants & Overalls	3.25/ 4.00
Thirds and Blues, Repacked	3.00/ 3.25
No. 1 Roofing Rags	1.65/ 1.75
No. 2 Roofing Rags	1.45/ 1.55
No. 3 & 4 Roofing Rags	1.35/ 1.45
Roofing Bagging	1.35/ 1.45

New Foreign Cotton Cuttings
(Prices to Mills, F.o.b. Dock, N. Y.)

	Per 100 lb.
New Dark Cuttings	$3.25/ $3.50
New Mixed Cuttings	3.50/ 3.75
Light Silesias	7.00/ 7.50
Light Flannelettes	7.00/ 7.50
New White Cuttings	nominal

New Unbleached Cuttings	nominal	
Fancy Shirt Cuttings	5.50/	6.00
Light Prints	6.00/	6.50
Bleachable Khaki, No. 1	4.75/	5.00
Unbl. Khaki, No. 1	4.00/	4.25

Old Foreign Rags

(Prices to Mills, f.o.b. Dock, N. Y.)

	Per 100 lbs.	
No. 1 White Cottons	$6.50/	$7.00
No. 2 White Cottons	5.50/	6.00
No. 3 White Cottons	3.50/	4.00
No. 4 White Cottons	3.00/	3.50
Extra Light Prints	4.50/	5.00
Old Light Prints	4.00/	4.25
Med. Light Prints	2.75/	3.00
Dutch Blue Cottons	3.25/	3.50
Checks and Blues	2.75/	3.00
Linsey Garments	2.10/	2.40
Dark Cottons, European	2.00/	2.25
Dark Cottons, Egyptian	1.85/	1.95
Old Shopperies	1.75/	1.85
New Shopperies	2.00/	2.25

Bagging

(Prices to Dealers, f.o.b. N. Y.)

	Per 100 lbs.	
Foreign Gunny	$5.75/	$6.00
Domestic Gunny, No. 1	5.50/	6.00
Heavy Wool Tares	5.25/	5.75
Foreign Manila Rope	5.25/	5.50
Domestic Manila Rope	5.25/	5.50
Jute Strings	5.50/	5.75
No. 1 Sisal Strings	3.00/	4.00
Mixed Strings	Nominal	
Paper Mill Tares	3.00/	3.50
No. 1 Scrap Burlap		
Foreign	4.00/	4.25
Domestic	4.50/	4.75
Austr. Wool Pouches	5.50/	6.00
New Burlap Cuttings	5.50/	6.00

MATERIALS

Aluminum, sulfate:

coml. bags, wks.	cwt.	1.50
iron free		2.75

Alcohol, etnyl:

tax free, dms. c.l.	gal.	.57 / .87
deld. East Miss.		

Casein, acid-prec.:

dom. sh. pt. c.l.	lb.	nominal
imp. ex dock	lb.	.34½/ .36½

Caustic soda:

c.l. wks. solid, 76%, cwt.		3.20
flak. & grd. 100-lb. drums		3.60
liquid 50% tanks		2.40
liquid 70% tanks		2.50

China clay:

dom. air-float. fillet. c.l. wks.	ton	10.00
water-washed		11.00
coating		16.00 /30.00
imported, ex whse., short ton		15.20 /28.35

Chlorine:

single-unit tanks, works	cwt.	2.55
multi-unit	cwt.	3.05 / 4.25

Formaldehyde:

USP, tnh. dms. c.l. wks.	lb.	.0570
l.c.l. E. wks.		.0620

Fuel oil:

Bunker C, No. 6 Cal. hvy. tanks, refinery	bbl.	1.25 / 1.35
light	bbl.	1.65 / 2.10

Hydrogen peroxide

USP, 35% cbys E of Miss.	lb.	.23½

Lime:

hydrated, bags, wks. Buffalo	ton	18.50

Rosin.

B gum, drms. c.l Savan.	cwt.	4.10
G, do	cwt.	6.11
H, I, K, do	cwt.	6.24
FF wood, do.	cwt.	4.60

Rosin size:

70%. gum & pale grds, tank cars, south, sh. pt.	cwt.	5.25 / 5.50

Salt cake.

dom. bulk, c.l. contract del'd	ton	18.00 /20.00
wks. frt. all	ton	22.00 / —

Soda ash:

light, 58%, bags, wks.	cwt.	1.35
bulk	cwt.	1.10

Sodium silicate 40°:

turbid, c.l. wks.	cwt.	1.10
l.c.l. wks.		1.30 / 1.40

Sodium peroxide:

dms. c.l. E. of Miss.	lb.	.18
l.c.l. do	lb.	.18½/ .19

Soybean, protein:

chem. isol, wks. c.l.	lb.	.24 / —
Cinn. and Chic.		

Sulfuric acid:

60° Be. cbys. c.l.	cwt.	1.40
E. wks. l.c.l.	cwt.	1.80 / 2.50

Sulfur:

crude c.l mines, contract,	long ton	18.00
f.o.b. vessels Gulf		19.50
Export, f.o.b. Gulf		22.00

Sulfur dioxide:

liquid, coml. cyl. wks.	lb.	.09
multi-unit cars	lb.	.0535

Starches

pearl corn, bags, c.l. Chic.	cwt.	5.42 / —
white dextrines, c.l. Chic.	cwt.	6.69 / —
potato, Idaho, c.l. wks.	cwt.	5.25 / —
potato, Maine, c.l. wks.	cwt.	5.25 / —
tapioca, conv. dextrines	cwt.	6.75 / 7.25
medium grds. Gulf and East Coast ports		5.50 / 6.25
low, Stam, on dock N. Y.		4.75 / 5.25

Talc:

domestic, 50-lb. sacks, c.l. wks.	ton	23.00 /28.00

Titanium dioxide:

anastase, c.l. deld., bags.	lb.	.19½
l.c.l. deld.	lb.	.20
rutile, c.l. deld.	lb.	.21½
l.c.l. deld.	lb.	.22½

N.B.: For special market conditions, see *Trends*.

This is

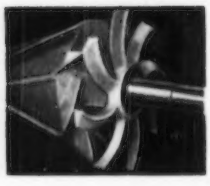
PULPING POWER

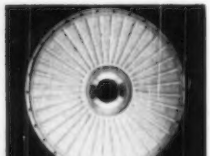
...in action!

This photograph (taken with stroboscopic light) can give only a hint of the tremendous agitating force produced by the Pulp Master.

4-way action. Diagonal bars on the heavy rotor quickly break up whole charges, baled or loose. Cone shape of rotor forces stock against walls, where specially shaped impeller blades whirl and recirculate it. When pieces are sufficiently reduced they are rubbed between impellers and radial barred refining discs for thorough defiberization.

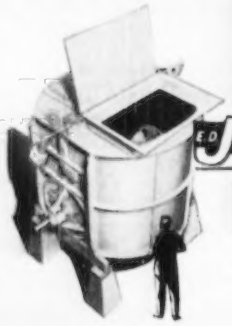
Complete disintegration of baled pulp, waste-paper, machine broke in 10 to 40 minutes. Efficient use of power and low maintenance cost make it extremely economical, too.





SEE IT IN ACTION

Four sizes, from 500 to 4,000 lbs. at 6½% density. Available for batch or continuous operation. Write for Bulletin EDJ-1019-A — or arrange to see the Pulp Master in action on your own stock.



E. D. Jones

PULP-MASTER

E. D. JONES & SONS COMPANY • PITTSFIELD, MASS.
BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

IMPORTS

IMPORTS AT NEW YORK

Week Ending Aug. 19

Newsprint

Meadows Wye & Co., KK
(———), Markland, Liverpool, N.S., 4175 rolls, 3472 rolls (Alexandria, Va.).
News Syndicate Co., Ethel Tombs, Gatineau, 309 rolls.
News Syndicate Co., Ted, Thorold, 1100 tons.
News Syndicate Co., Mimi, Thorold, 1100 tons.
R. A. Olsen, Newscarrier, Donnacona, 386 rolls.
News Syndicate Co., Elin Hope, Baie Comeau, 7640 rolls.
News Syndicate Co., Ethel Tombs, Gatineau, 316 rolls.
R. A. Olsen, A.C.D., Donnacona, 367 rolls.
News Syndicate Co., Mont Alta, Baie Comeau, 6896 rolls.
R. A. Olsen, G.T.D., Donnacona, 375 rolls.
R. A. Olsen, Donpac, Donnacona, 366 rolls.
News Syndicate Co., Ethel Tombs, Gatineau, 310 rolls.
R. A. Olsen, G.D.D., Donnacona, 332 rolls.

Writing Paper

Dempsey & Carroll, Washington, Southampton, 3 cs.
H. W. Robinson Co., De Grasse, Havre, 7 cs.

Parchment

Meadows Wye & Co., Queen Elizabeth, Southampton, 1 cs.
International Maritime Forwarding Co., Queen Elizabeth, Southampton, 1 cs.

Surface Coated Paper

Gevaert Co. of America, Jessie Maersk, Antwerp, 18 cs.

Gummed Paper

B. F. Drakenfeld & Co., American Chief, Liverpool, 47 cs.

Boxboards

General Motors Overseas Operations, Stockholm, Gothenburg, 50 bdls.

Wallpaper

C. A. Haynes & Co., American Chief, Liverpool, 2457 ctns, 187 pkgs.

Cigarette Paper

Resolute Paper Products Corp., Near Dizengoff, Haifa, 21 cs.

Miscellaneous Paper

Coty Inc., De Grasse, Havre, 7 cs.

Rags, Baggings, Etc.

D. Benedetto, Jessie Maersk, Rouen, 48 bls. rags.
(———), Jessie Maersk, Rouen, 87 bls. rags.
E. J. Lang, Jessie Maersk, Rouen 268 bls. jute rags.
E. J. Keller Co. Inc., Jessie Maersk, Rotterdam, 121 bls. old bagging.
Midwest Waste Materials Co., Jessie Maersk, Antwerp, 98 bls. scrap bagging, 140 bls. bagging.
Chase National Bank, Jessie Maersk, Antwerp, 32 bls. old bagging.
Dadourian Export Corp., Heina, Antwerp, 209 bls. rags.
Intermaritime Forwarding Co., Heina, Rouen, 34 bls. rags.
E. Butterworth & Co. Inc., American Chief, Manchester, 66 bls. old bagging.
(———), American Chief, Manchester, 37 bls. paperstock, 40 bls. light hessians.
(———), American Chief, Manchester, 38 bls. bagging.
Chase National Bank, American Chief, Manchester, 91 bls. old bagging.
E. J. Keller Co. Inc., American Chief, Manchester, 56 bls. bagging.
E. J. Lang, American Chief, Manchester, 71 bls. bagging.
A. Siegle Corp., American Chief, Liverpool, 96 bls. jute waste.
(———), Birmingham City, Swansea, 429 bls. old jute paperstock.
Darmstadt Scott & Courtney, Birmingham City, Avanmouth, 80 bls. jute waste.
Arlash Import Co., Brazil, Buenos Aires, 35 bls. cotton rags.
J. Stein, Brazil, Buenos Aires, 34 bls. cotton rags.

Casein

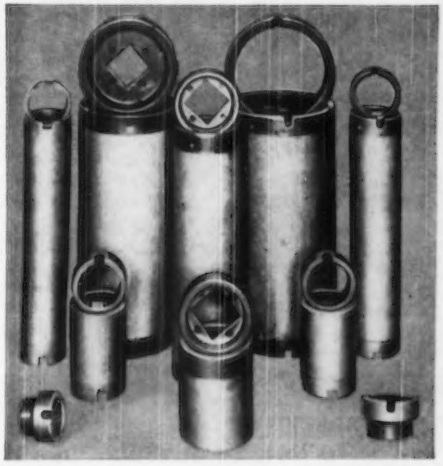
E. M. Sergeant Pulp & Chemical Co., Stavangerfjord, Oslo, 500 bags (rennet).
P. A. Dunkel, St. Malo, Bordeaux, 417 bags.
Industrial Raw Chemical Corp., Kristina Thorden, Gothenburg, 3454 bags.
Tupman Thurlow Co., Brazil, Buenos Aires, 300 bags (lactic).
American Cyanamid Co., Brazil, Buenos Aires, 1000 bags (lactic).
New York Trust Co., Brazil, Buenos Aires, 2000 bags.
Borden Co. Chemical Division, Brazil, Buenos Aires, 900 bags.
E. Lang, Inc., Brazil, Buenos Aires, 1745 bags.
W. Ellis, Brazil, Buenos Aires, 1060 bags.
Crawford Co., Brazil, Buenos Aires, 700 bags.

Gluestock

J. Gorvers, Santa Clara, Barranquilla, 6 rolls.
H. Remis, Santa Clara, Barranquilla, 195 rolls.
S. Hogner, Cape Ann, Barranquilla, 466 pkgs.

Woodpulp

Price & Pierce, Ltd., Markland, Liverpool, N.S., 960 bls. unbleached sulphite pulp.
C. G. Joa, Inc., Stockholm, Gothenburg, 18 bls. sulphite pulp.



ELIXMAN
CORES
CAPS

Straight wound paper cores made in sizes from 2" to 10" inside diameter with any thickness wall required.

Long draw protected slot caps of heavy gauge steel in all standard sizes.

Heavy duty caps with reenforced square hole. This patented feature of reenforcement gives added strength and durability.

Samples of caps or cores will be gladly submitted

ELIXMAN PAPER CORE COMPANY, INC.

CORINTH, N. Y.

IMPORTS AT ALBANY

Week Ending Aug. 19

The Borregaard Co. Inc., Kristina Thorden, Gothenburg, 508 bls. dry chemical pulp.

Pagel Horton & Co. Inc., Kristina Thorden, Karskar/Gefle, 1575 bls. woodpulp.

Price & Pierce, Ltd., Kristina Thorden, Ornskoldsvik, 1200 bls. dry chemical pulp.

Pagel Horton & Co. Inc., Kristina Thorden, Ornskoldsvik, 1524 bls. dry bleached sulphate pulp, 3048 bls. dry unbleached sulphate pulp.

IMPORTS AT BOSTON

Week Ending Aug. 19

E. Butterworth & Co. Inc., American Chief, Manchester, 150 bls. old bagging.

Ayres W. C. Jones, American Chief, Manchester, 56 bls. bagging, 50 bls. cotton waste.

Stone & Downer Co., American Chief, Liverpool, 21 cs. gummed paper.

IMPORTS AT PHILADELPHIA

Week Ending Aug. 19

China American Paper & Pulp Co., Exemplar, Trieste, 837 bls. chemical pulp.

Bank of America, Exempler, Trieste, 296 bls. unbleached sulphite pulp.

(———), Exemplar, Trieste, 1503 bls. bleached sulphite pulp.

Bulkley Dunton Co., Kristina Thorden, Stettin, 3393 bls. wood pulp.

Pagel Horton & Co. Inc., Kristina Thorden, Karskar/Gefle, 762 bls. woodpulp.

Pagel Horton & Co. Inc., Kristina Thorden, Ornskoldsvik, 2429 bls. dry bleached sulphate pulp.

Pagel Horton & Co. Inc., Kristina Thorden, Hornefors, 912 bls. dry sulphite pulp.

E. J. Keller Co. Inc., Jessie Maersk, Rouen, 71 bls. rags.

Belmont Burlap Bag Co., Jessie Maersk, Rotterdam, 100 bls. jute waste bagging.

C. Kurz, Jessie Maersk, Antwerp, 75 bls. rags.

Leigh Textile Co., American Chief, Manchester, 94 bls. bagging.

Reigel Paper Corp., American Chief, Manchester, 47 bls. paperstock.

Belmont Burlap Bag Co., American Chief, Manchester, 57 bls. jute waste bagging.

IMPORTS AT BALTIMORE

Week Ending Aug. 19

Bank of America, Exemplar, Trieste, 630 bls. unbleached sulphite plup.

Pagel Horton & Co. Inc., Kristina Thorden, Hornfors, 3660 bls. dry sulphite pulp.

Bulkley Dunton Co., Kristina Thorden, Stettin, 213 bls. woodpulp.

J. P. Flessig, Jessie Maersk, Rouen, 48 bls. rags.

A. W. Fenton Co., Jessie Maersk, Rouen, 128 bls. scrap bagging, 40 bls. bagging.

IMPORTS AT NEWARK

Week Ending Aug. 19

Gottesman & Co., Inc., S. S. Uddeholm, Ostrand, Sweden, 960 bls. unbleached sulphite pulp.

IMPORTS AT NORFOLK

Week Ending Aug. 19

H. G. Lichtenstein, Jessie Maersk, Rotterdam, 114 bls. cotton waste.

A. de Vries Trading Corp., Heina, Rouen, 85 bls. rags.

Dixie Jute Bagging Co., American Chief, Manchester, 105 bls. bagging.

Railway Supply & Manufacturing Co., American Chief, Liverpool, 175 bls. cotton waste.

THWING-ALBERT

PAPER TESTING INSTRUMENTS

With the experience of half a century of fine instrument making, we make fifty-six paper testing instruments, modifications and major accessories for standard testing instruments—many of them adopted by ASTM-TAPPI-JAN-AAR-GIA

Elmendorf Tearing Tester
Basis Weight Scale
Clark Softness-Stiffness Tester
Inkometer
Electro-Hydraulic Tensile Tester
Pendulum Type
Rigid Cross-Head Type
Grips for every purpose.
Pulp Classifier—4 screen
Currier Size Tester
Formation Tester
Vapometers
IPC Electric Hygrometer for MVP
Penescope Penetration Testers
Laboratory Corrugator
pH Meters
McLaurin Gummed Tape Tester
Carson Curl & Size Tester
Dryer Roll Pyrometers
Precision Sample Cutters

THWING-ALBERT
INSTRUMENT COMPANY

5366 Pulaski Avenue
Philadelphia 44, USA
106

ASSOCIATIONS

Metropolitan TAPPI Program

NEW YORK—A meeting of the executive committee of Metropolitan TAPPI was recently held to set up committees and a program for the coming year. L. S. Reid, J. F. Butterworth, H. J. Perry and W. R. Willets were present.

At the meeting, the following chairmen were appointed for the year 1950-1951: program committee, W. R. Willets; publicity committee, E. P. McGinn; membership committee, William Landes.

The tentative program is shown below:

September 12: Development of New Papers by the Use of New Chemicals.

October 10: Effect of Present Political and Economic Trends on our Industry.

November 14: Technical Problems of the Newspaper Industry.

January 9: New Ideas in the Use of Paper for Automatic Packaging.

March 6: Use of Paper by Business.

April 3: Machinery Innovations in the Industry — new methods of refining, new paper machines, etc.

Annual meeting program will be announced later. The next meeting of the executive committee will be held at 5 p.m. on September 12 at Faunces Tavern.

Supts. Philadelphia Meeting

The Pennsylvania-New Jersey-Delaware Division of The American Pulp and Paper Mill Superintendents Assn., Inc., with Glen T. Renegar of Container Corp. of America, Manayunk, Philadelphia, Pa., as chairman, has sent out an announcement to members and friends of the Division covering its 1950 fall meeting. The meeting will be held on October 6-7, 1950, at the Warwick hotel in Philadelphia. Program will follow the same basic plan that was used so successfully for the 1950 spring meeting at York.

Mr. Renegar recalls the pressing need for more and better information on how to keep costs down, increase production, improve quality, solve operating problems, obtain better standards of foremanship and improved employe-employer relationship. He also stresses the need for the exchange of such information between mills in the paper industry.

Mr. Renegar requests that all room reservations be made direct with the hotel. Such communications should be addressed to Bernard Jackson, Warwick hotel, Philadelphia, Pa.

International Exhibit at Düsseldorf

DUSSELDORF, Germany—The first information about the International Exhibition Print and Paper — called "drupa" — has met with considerable interest. The longing of experts for a comprehensive show demonstrating the capacity of the graphic trade, the paper and pulp industries, and all kindred trades is a very strong one in all economic branches concerned. All competent associations in the Federal Republic have already confirmed their readiness for cooperation and assistance.

This show will be held at Dusseldorf. The classification of exhibits will be as follows: Machinery and Accessories, Raw Materials and Auxiliary Means, Graphic Products, Paper and Pulp Working, Advertising Art, and Associations.

It will be opened May 26, 1951, and will close on June 10, 1951.

NEW PAPER USES

Paper for Color Film

Eastman Kodak Co. has announced a new paper, Ektacolor BW paper, which will be used to make black and white prints from Ektacolor negatives.

The new paper is available only in E surface, single weight.

Eastman also has announced a new pint-size Ektachrome processing kit.

The new 16-ounce kit, for users of 120 and 620 size Ektachrome roll film,

THE H. K. FERGUSON COMPANY

PAPER MILL ENGINEERS & BUILDERS

Complete Service for Design, Construction, Equipment Installation, Engineering Reports and Surveys

Executive Offices
Ferguson Building, Cleveland

District Offices
19 Rector St., New York, M & M Bldg., Houston, 120 S. La Salle St., Chicago, 2975 San Fernando Road, Los Angeles, 21 E. 12th St., Cincinnati

will color develop two rolls under normal procedure and additional rolls by following recommended adjustments in processing times.

Goodwill Builder

Paper has assumed the role of goodwill builder at the Free-Hart Bakery of Columbus, Miss.

Waxed opaque paper, pre-cut to 17 x 15 dimensions, is distributed by the bakery free of charge to local news distributors for wrapping newspapers on rainy mornings. The wrappers bear the legend: "Your paper is dry today through the courtesy of Free-Hart Bakery," printed in red ink. This public relations message reaches more than 1250 Columbus homes on wet days, has brought thanks and compliments pouring into the offices of bakery owners Robert Englehardt and Lon Freeman. "They are definitely paying dividends," stated Englehardt. Rubber bands hold the "newspaper raincoats" in place. The raincoats have kept the papers dry in even the most drenching rains and when the papers landed in large puddles of water.

Forty to a pound, the wrappers cost Free-Hart less than ½c each. Previously, the bakery employed ordinary bread wrappers. The wrappers are purchased in lots of 12,000.

Costwise, Free-Hart pays an average of $37.50 per month for this promotion. Compared with those of newspaper and radio advertising, the results stack up favorably.

NEW LITERATURE

Armstrong Machine Works. Bulletin, "Are Steam Traps Practical for Draining Paper Machine Dryers?" Tabular data compares venting capacities of Armstrong traps with fixed orifices.

American Institute of Accountants. Booklet, price 50c, "Audits By Certified Public Accountants, Their Nature and Significance." Discusses financial statements, the CPA report, auditing philosophy and procedures.

Bete Fog Nozzle, Inc. Bulletin, "The New BETE G-5 Fire Nozzle." Illustrates construction and method of operation in extinguishing fires.

Clark Cooper Co. Bulletin 250, "New Water Conditioning System." Features water purification without the use of chemicals.

De Laval Steam Turbine Co. Bulletin G-WBV, "Worm Gear Speed Reducers, Single Reduction Horizontal or Vertical." Covers latest revised AGMA horsepower ratings.

The Deming Co. Bulletin No. 4700, "Deming Vertical Turbine Pumps." Describes and illustrates deep well turbine pumps in diverse applications.

Farrel-Birmingham Co., Inc. Bulletin 118, "Two-Wheel, Swing-Rest Roll Grinders." Explains the swing-rest principle in grinding performance.

Heinemann Electric Co. Bulletin 3410, "Non-Enclosed General Purpose Circuit Breakers." Portrays the Heinemann line for general industrial use, with special treatment to the subject of true inverse time delay, high-speed latch and magnetic blowout.

The Thew Shovel Co. Catalogs. Announces new line of Lorain-TL Series and Lorain-50 Series of power shovels and cranes.

Sam Tour & Co., Inc. Brochure, "All Under One Roof." Portrays the scope of research done by Tour scientists, engineers, consultants and laboratories.

Flexible Valve Corp. Bulletin #455. Data on manufacturer's line of natural and synthetic rubber pinch-type Flex-Valves for corrosive and abrasive fluids.

U. S. Department of Agriculture. Bulletin A.I.B. No. 10, 10 cents. "How Forest Conditions Affected the 1948 Columbia Flood." Circular No. 845, "Management of Natural Slash Pine Stands in the Flatwoods of South Georgia and North Florida." Agriculture Handbook No. 5, "Pocket Guide to Alaska Trees," 25 cents.

NEW EQUIPMENT

Home-made Direct Seeder

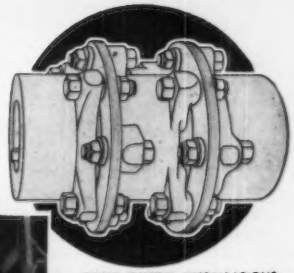
The new seeder was developed by the woodlands operations of a U. S. paper mill to overcome the problems

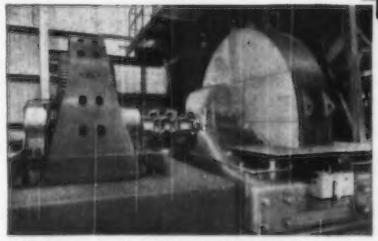
THOMAS *Flexible* ALL METAL COUPLINGS

FOR THOSE TOUGH PAPER MILL DRIVES

Patented Flexible Disc Rings of special steel transmit the power and provide for parallel and angular misalignment as well as free end float.

Thomas Couplings have a wide range of speeds, horsepower and shaft sizes:
½ to 40,000 HP
1 to 30,000 RPM





153" Sumner Iron Works Chipper—1500 HP @ 277 RPM—Soundview Pulp Co., Everett, Wash.

OTHER CHIPPER INSTALLATIONS
PUGET SOUND PULP & TIMBER CO. Bellingham, Wash.
CROWN-ZELLERBACH CORP. Port Townsend, Wash.
ST. REGIS PAPER CO. Tacoma, Wash.
CROWN WILLAMETTE PAPER CO. Camas, Wash.
RAYONIER, INC. Shelton, Wash.
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AMERICAN PAPER AND PULP ASSOCIATION'S PAPER PRODUCTION RATIO REPORT

(Production as percent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

	July 15	July 22	July 29	Aug. 5	Aug. 12
1950	99.1	102.5	106.1	106.5r	105.0
	July 16	July 23	July 30	Aug. 6	Aug. 13
1949	*76.0*	*82.7*	*84.0*	*83.5*	*85.9*

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1949	*94.6*	*92.8*	*89.1*	*85.1*	*82.7*	*78.6*	*72.8*	*87.6*	*89.7*	*96.9*	*98.2*	*89.8*	*88.0*
1950	97.6	101.1‡	102.6‡	100.9‡	101.8‡	103.2‡	90.8‡						

r Revised.
‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1943	1944	1945	1946	1947	1948	1949	1950
Year to Date	88.1	87.7	87.7	99.8	103.7	97.5	85.4	100.4
Year Average	87.8	88.1	89.4	100.1	104.3	96.2	88.0	

PAPERBOARD OPERATING RATIOS†

	July 15	July 22	July 29	Aug. 5	Aug. 12
1950	82	95	96	98	99
	July 16	July 23	July 30	Aug. 6	Aug. 13
1949	*54*	*76*	*80*	*82*	*84*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1949	*88*	*89*	*79*	*79*	*78*	*75*	*64*	*86*	*87*	*94*	*91*	*83*	*83*
1950	88	92	91	92	91	94	82						

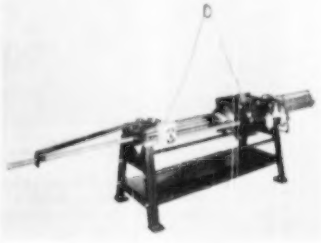
All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.

of direct seeding. Designed and constructed by shop and field personnel, the machine was made from a small rotary tiller with two corn planting hoppers attached in such a way that a regulated volume of seed can be introduced into the dirt litter made by the blades of the tiller. Thus by covering the seed with a thin layer of soil, the loss by birds and rodents is cut down and a seed bed assured for germination. It is anticipated that test runs already made will show an appreciable cut in the costs of forest planting.

Bale Sampler

The Bale Sampler is designed for cutting a deep sample out of a bale of fibrous material such as waste paper, rags, etc. Cutter is rotated by means of a 1½ hp. gear motor and advanced into the bale by means of a 4½" diameter air cylinder under a pressure of 40 to 60 psi. Full stroke of cutter is 30 ins., inside diameter of cutting tube is 2 inches. Thus the sample cut out of bale is 2 inches in diameter and 30 inches long. To remove material from tube, the stripper bar is swung out and cutter tube advanced. The stripper pushes the material out of tube at end near gearmotor.



Saran-Lined Valves

Saran-lined diaphragm valves of the Saunders type have been developed for handling corrosive fluids and gases. Special castings designed for the purpose are lined with B-115 saran rubber, the same material used in saran-lined pipe and fittings. Diaphragms are normally furnished in saran rubber, but others of natural rubber, neoprene and Kel-F can be furnished for special conditions. Valves comes in sizes 1 to 6 ins. with flanged ends, and are usually equipped for hand-wheel operation. Quick-opening lever operators, electric motor and air motor operators are available.

Obituaries

N. H. Carpenter, Jr. general manager of the Muskingum Fiber Products Co., Division of the General Container Corp., as well as vice-president and director of the parent General Container Corp., died recently.

Edward A. Lindsey, 78, president of the American-Tri-State Paper Box Co., died August 18. He is survived by two daughters, Mrs. Lindsay Hart and Miss Martha Lindsey.

James C. McKalip, treasurer of General Paper Corp. of Pittsburgh, Pa., died on August 4.

Robert E. McLennan, 45, who represented Crossett Paper Mills in the South and Southwest ever since the company started operations, died suddenly in his home in Crossett, Ark., August 16.

His business activities not only were in the field of paper sales, but also included a keen interest in Southern paper trade associations and traffic matters, in both of which he took an active part.

He is survived by his widow, Ruth; and daughter, Bobbye Kay.

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Cigarette **Wax** **Photographic** **Jet Propulsion**
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LITHOGRAPH	INDEX BRISTOL
LABEL	POST CARD
OFFSET	COVER
EGGSHELL	CUP AND CONTAINER
MUSIC	FILE FOLDER
POSTER	TAG
BOND	COATED
WRITING	MACHINE COATED

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The Trademark of Felts of Superior Quality for Every Grade of Pulp and Paper

KNOX WOOLEN COMPANY
CAMDEN, MAINE

CLEARING HOUSE

HELP WANTED

MEN WANTED
POSITIONS OPEN

We can place assistant manager and assistant superintendent kraft mill; superintendent roofing felt mill; 2 finishing foremen; Cylinder machine foreman; salesmen for paper and paper products. Chemists and chemical engineers for mills and for selling positions; master mechanics, plant engineers, designers, draftsmen and mechanical engineers, for mills and for firms building paper mill machinery; project engineers; heater engineers; tour boss.

We invite correspondence (confidential) with executives seeking positions and with employers seeking new personnel.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington Street, Boston, Mass.
A-24

SUPERINTENDENT
FOR MILWAUKEE PAPER CONVERTING PLANT

Man with present or previous experience in paper manufacturing preferred. Excellent opportunity for the right man. In answering, please state age, education and experience.

WRITE (BOX 50-382) TRADE JOURNAL
A-24

SALARIED POSITIONS $3,500—$25,000

If you are considering a new connection communicate with the undersigned. We offer the original personal employment service (40 years recognized standing and reputation). The procedure, of highest ethical standards, is individualized to your personal requirements and develops overtures without initiative on your part. Your identity covered and present position protected. Send only name and address for details.

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115 State Street, Springfield 3, Mass.

Specialized Confidential Placement Service For the Paper and Allied Industries
Administration—Production—Technical—Sales

Men and Positions always available
Inquiries welcome
A-31

EXPERIENCED Machine and Back Tender wanted on cylinder machine making folding grades of board. State experience and age in your letter. Steady employment. Address Box 50-384 care Paper Trade Journal. A-24

WORKING SUPERINTENDENT for small, fast growing Eastern mill making lightweight specialties. Cylinder machine experience essential. State qualifications and salary expected. Address Box 50-378 care Paper Trade Journal. TF

WANTED — MILL MANAGER for New York State Sulphite Pulp Mill. Excellent opportunity for aggressive, capable man. Address Box 50-379 care Paper Trade Journal. A-31

PROFITABLE SIDELINE for Salesman calling on the Paper and Allied Industries. Patented, Static Eradicator. PERSONNEL SERVICE ASSOC., 115 State Street, Springfield 3, Mass. A-31

HELP WANTED

MILL IN THE EAST

starting up a new cylinder machine to run Tissue paper needs Machine Tenders and Back Tenders. Give Reference. Apply Box 50-403. Care Paper Trade Journal.

S-14

CHEMIST with experience in deinking operations. Send full resume to Box 50-402 care Paper Trade Journal. A-31

SITUATIONS WANTED

PLANT ENGINEER—Experienced in large sulphite specialty pulp and paper mill maintenance and engineering; paper mill design; desires responsible mill connection. Address Box 50-350 care Paper Trade Journal. TF

PLANT MANAGER—Board and Paper Conversion; employed; seeks opportunity in company needing cost-minded executive with proven production record and excellent labor relations history. Address Box 50-383 care Paper Trade Journal. A-31

PRODUCTION MANAGER or Superintendent—Experienced on Sulphite, fine, groundwood, printing and converting and lightweight specialties also machine coating. Extensive knowledge of printing and converting fields. Address Box 50-361 care Paper Trade Journal. N.C.

B.S. (CHEM. ENG.), 30, married, wants responsible position as Assistant Mill Manager, Assistant Plant Superintendent or Assistant to Executive. 5 years selling and 4 year production management experience. Presently employed, available on short notice. References from present employer and others available. Resume on request. Address Box 50-397 care Paper Trade Journal. A-31

FOR SALE

FOR SALE

2—Thune presses, new in 1927, made by Thunes Mekaniske, Vaerksted, of Norway. One has electric drive 440 volt, primary and secondary controls and mechanical link belt drive, on other unit.

Frank H. Davis Co., 175 Richdale Ave., Cambridge, Mass.
A-31

FOR SALE—2 used 46-inch Waldron 6-brush coating units with complete festoon drying system and reelers. Good condition. Price reasonable. Address Box 50-253 care Paper Trade Journal. TF

FOR SALE

FOR SALE

1—Four cylinder board machine with two spare cylinders, 93" trim, capacity 30 tons, made by Black & Clawson Company. Two sets primary presses, two sets of main presses, rolls 18" and 20" diameter. Dryer section has 38 dryers 42" x 98" face, arranged triple deck. Two very heavy 8 roll stacks of calenders, box frame, Farrel type. Reel, duplex cutter, winder, variable speed line shaft. All set up in a mill and can be put into operation with only minor repairs. Price $75,000.00 where and as is for quick sale.

1—120" Extractor roll (suction) with rubber covered rider roll 18" diameter, No. 6 Nash pump, 75 HP 440 volt motor, mounted on base, also one plain extractor roll.

Address Box 50-593 care Paper Trade Journal.
A-24

FOR SALE

One Ferguson Packomatic Case Sealing Machine complete with all operating equipment. Adjustable for case sizes.

Noble & Wood Mill complete with 600 HP Induction Motor, Magnetic Controller and Extra Equipment.

A. P. W. Products Company, Inc.
Albany, N. Y.
A-31

FOR SALE—IRON FIREMAN Automatic Coal Stoker-Winder feed retort. Size 4A. Capacity 425# per hour. In good condition and suitable for small industry. Offered subject to prior sale. THE RUBEROID COMPANY, Erie, Pa. A-31

FOR SALE—36" Slitter & Rewinder Shear Cut with 3 Rewind Arms; 34", 64" and 96" Rotary Sheeters; 50" Seybold Paper Cutter; 28" x 41" Thomson Platen Die Cutter. Write for listing of over 90 Paper Converting Machines for sale. Address Box 50-392 care Paper Trade Journal. TF

FOR SALE—New Shartle Waxer 84" complete with water tower unwind and rewind stand. Available immediately. Address Box 50-401 care Paper Trade Journal. A-24

FOR SALE OR LEASE—Several Coating and Laminating Machines available for manufacture of Government specification papers. Address Box 50-400 care Paper Trade Journal. A-24

RATES FOR CLASSIFIED ADVERTISING

HELP WANTED—10c a word. Double rate for heavy face type. Minimum charge $2.50.

SITUATIONS WANTED—10c a word, double rate for heavy face type. Minimum charge $2.50. If repeated ½ rate will be charged for each consecutive repetition.

FOR SALE—10c a word. Double rate for heavy face type. Minimum charge $2.50.

WANTED—10c a word. Double rate for heavy face type. Minimum charge $2.50.

OPPORTUNITIES—10c a word. Double rate for heavy face type. Minimum charge $2.50.

Classified advertising space may also be purchased at $5.00 per single column inch. All classified advertisements are payable in advance.

If box number is used—70 cents additional.

Address replies to advertisements appearing under Box Numbers in care of PAPER TRADE JOURNAL, 15 West 47th Street, New York 19, N. Y.

FOR SALE

1—112" Cameron, Type 18, 60" rewind.
1—72" Cameron, Type 10-11 (Late type)

BALER
1—Wire Baler.

BEATERS
1—500 lb. Beater—iron tub.
1—Dilts Iron Tub Laboratory Beater. Beater roll 14" diameter x 10½" face, including motor.

CALENDER STACKS
1—72" 5 roll Calendar Stack.
1—2 roll pressure calender—32" x 108".
1—72" 4 roll calender stack. (Extra heavy duty).

CHIPPER
1—96" Murray 4 knife Chipper—anti-friction bearings.

CRUSHER & HAMMERMILL
1—Murray Chip Crusher.
1—Jeffrey Hammermill.

CYLINDER MOLDS
1—30" diameter x 72" face.
1—36" diameter x 79" face.
1—48" diameter x 84" face.
1—36" diameter x 88" face.
2—38" diameter x 54" face.

DECKERS
3—IMPCO 75⅛" face x 30" diameter cylinder mold.

DIGESTERS
2—14 ft. Rotary Digesters.

DRIVES
1—#4 Reeves Drive.
1—#3 Reeves Drive.
1—#5 Reeves drive.

V-BELT DRIVE
(1—21½" diameter x 7½" face, 5 groove.
(1—16½" diameter x 7½" face, 5 groove.
(With clutch).

DRYERS
1—Complete unit, consisting of 6 dryers, 36" diameter x 38" face, including frames, gears, anti-friction bearings.
2—42" diameter x 74" face.
7—24" diameter x 48" face.
4—36" diameter x 72½" face, with gears and bearings.
1—48" diameter x 91" face.
1—36" x 143".
1—24" x 130".
3—36" diameter x 96½" face.
1—48" diameter x 70" face.
2—48" diameter x 92" face.
1—48" diameter x 82" face.
2—36" diameter x 76" face.
23—36" diameter x 70" face—complete.

EMBOSSER
1—84" Hudson Sharp Toilet Embosser. Spare engraved roll.

FELT CONDITIONER
1—146" Nash Felt Conditioner.

FLAT SCREENS
1—6 plate Shartle Flat Screen.

FRAMES
2—Deck Frames for 8 Dryers, 48" diameter. Vertical frames for 100 dryers, 48" diameter, with bearings.

JORDANS
2—Noble & Wood Mammoth Junior.
1—Noble & Wood Mammoth Senior.
1—Emerson Jordan—25 to 30 tons capacity—iron plug including new spare iron plug.

LABORATORY EQUIPMENT
1—3' Shartle Hydrapulper, with motor.

LIME SLUDGE FILTERS
2—IMPCO Lime Sludge Filters, vacuum type, 5' diameter x 4' face.

MISCELLANEOUS
1—Caustic Mixer.

MOTORS
Write us regarding your requirements.

PRESSES
3—Sets Primary Presses, complete, 145" face. Anti-friction bearings. Also all types of rolls for 145" wet end.

PULLEYS
Various cone and assorted pulleys.

PULP BALER
1—140 ton hydraulic Pulp Baler. (Practically new).

PULPERS
1—Jones Pulper. Complete with motor and drive.
1—Noble & Wood Pulper—Iron Tub.

PULP PRESSES
2—Pulp Presses 76" wide (Kamyr Type).

PUMPS
Various sizes of Centrifugal and Plunger Pumps. Write us regarding your particular requirements.

REEL
1—104" two bowl reel.

ROLLS
Felt, Table, Press, Breast, Couch, etc. Various sizes and types. (Bronze, Rubber, Iron, etc.)

ROTARY SCREENS
1—#2 Bird Rotary Screen.
1—#2A Bird Rotary Screen.
3—#2A Cylinders. (only for Bird Rotary Screens). (Chrome plates).

SAVEALLS
1—#4 Bird Saveall.

SHEETERS
1—136" Moore & White Sheeter, duplex with layboy.
2—36" Sheeters.
2—46" Sheeters.
2—50" Sheeters.
1—82" Clark Sheeter (Simplex.)

SLITTERS AND WINDERS
1—84" Cameron—Type 8-10.
1—72" Cameron—Type 10-11 (Late type).
1—50" Cameron—Type 24-2L.
1—42" Cameron—Type 40-4-B.
3—42" Cameron—Type 24-2-A.
1—42" Cameron—Type 9-S.
1—42" Cameron Constant Tension with pneumatic control
1—113" 2 drum Waldron
2—112" Cameron Type 18.

STOCK PUMPS
1—10 x 20 Shartle Duplex.
1—7 x 16 Shartle Duplex.
4—7 x 16 Shartle Triplex.
1—10 x 20 Shartle Triplex.
2— 8 x 18 Shartle Duplex.
Advise as to your requirements.

SUCTION BOXES
5—Suction Boxes, 82" drilled face x 6" wide.

SUCTION COUCH ROLL
1—Sandusky 14.8" dia. x 105" drilled face.

VACUUM PUMPS
1—#1 Nash Hytor.
1—#3 Nash Hytor.
1—#6 Nash Hytor.

VAT
1—Iron end Vat only, for decker or saveall, suitable for cylinder mold 36 x 130.

WASHERS
1—3 cylinder Washer 30" diameter x 75" face cylinder mould.

WAXING MACHINES
1—72" Mayer Waxer.
1—80" Potdevin Waxing Machine.

YANKEE DRYERS
3—Yankee Dryers 84" diameter x 52, 53 and 62" face.

We are always in the market to purchase your surplus or idle machinery. What have you to offer? Wanted Cylinder and Fourdrinier Machines (complete mills).

Paddy Ross, Pres. **J. J. ROSS COMPANY** Ben Kurs, Treas.
250 Frelinghuysen Ave. Tel.—Bigelow 3-3720 Newark 5, N. J

FOR SALE

100" Horne single knife Sheeter with back-stand.
64" Hamblet Sheeter with Layboy and back-stand.
58" Finley Sheeter.
36" Back Sheeter.
74" Beloit 2-drum Rewinder.
48" Kidder model CH Slitter.
32" Cameron model 24-1A Slitter.
2—Three-color Rotary Printing Presses, 60" wide.
Cottrell 3-color Bag Press.
Flat Cutters, 32", 38", and 44" Power Machines.

Also many good values in Printing, Newspaper & Lithographing Equipment.

THOMAS W. HALL COMPANY, Inc.
120 West 42nd St., N. Y. 18
(Plant at Stamford, Conn.) TF

PAPER COATING MACHINERY MANUFACTURERS — Waxing, Oiling, Carbon, Laboratory Coating and Treating and Flat Ream Measuring and Converting Machines. New improvement. THE MAYER MACHINE COMPANY, INC., 1313 Buffalo Road, Rochester, 11, N. Y. TF

WANTED

WANTED—One Hamblet revolving cutter—60" to 68" knife. Other makes considered.
One Nash Vacuum Pump, No. L-4.
One Cameron Winder, 42". No. 10 or better. Advise condition and best prices. Advise Diam. Rolls it will make.
1—68" to 70" face by 36" diameter Dryer.
2—60" to 62" face by 36" diameter Dryers.
Address Box 50-226 care Paper Trade Journal. TF

WANTED—W & P Shredders, Evaporators, Generators and Boilers, Slitters, Cutters, Hydraulic presses, Sheridan Presses, Dryers. Address Box 50-18 care Paper Trade Journal. TF

WANTED—English or Pope type reel 84" to 120" width. Address Box 50-367 care Paper Trade Journal. A-31

WANTED—Brightwood Box Machine, Shredders, Evaporators, Generators and Boilers, Slitters, Cutters, Hydraulic presses, Sheridan Presses, Dryers. Address Box 50-193 care Paper Trade Journal. TF

WANTED

WANTED

Second Hand 60" or other size waxing machine. What do you have to offer? Address Box 50-399 care Paper Trade Journal.

WANTED—48" diameter cast iron dryers 128" to 134" face. Address Box 50-354 care Paper Trade Journal. A-31

WANTED: To purchase a Paper Mill preferably in the East. Address Box 50-398 care Paper Trade Journal. A-31

CLASSIFIED ADVERTISING BRINGS RESULTS

GOVERNMENT BIDS

PROPOSALS

FOR FURNISHING

PAPER FOR THE U. S. GOVERNMENT PRINTING OFFICE

SEALED PROPOSALS will be received until 10 a.m., September 11, 1950, in the room of the Joint Committee on Printing, in the Capitol, Washington, D. C., for furnishing the paper for the public printing and binding, and blank paper for the use of the Government departments and establishments in the District of Columbia, for the term of three months, beginning October 1, 1950; deliveries to be f. o. b. Government Printing Office Warehouse, or warehouse siding, Washington, D. C. The proposals will be opened in the presence of and the award of contracts made by the Joint Committee on Printing to the lowest and best bidders for the interest of the Government whose bids are in conformity with the requirements of the proposal. The Committee reserves the right to reject any or all bids, or to accept any bid or any part and reject the other part, if, in its opinion, such action would be in the interest of the Government.

Blank proposals containing the instructions, schedules, and specifications may be obtained by addressing John J. Deviny, Public Printer, Washington 25, D. C.

Contracts will be entered into for supplying the quantities required, whether more or less than the estimates, as provided in paragraph 15 of the instructions.

The approximate estimated quantities set forth in detail in the schedule comprise:

PAPER

1,500,000 pounds newsprint paper; 2,060,000 pounds machine-finish book paper; 250,000 pounds english-finish book paper; 40,000 pounds machine-finish book end paper; 100,000 pounds lightweight machine-finish book paper; 3,250,000 pounds offset book paper; 320,000 pounds antique book paper; 150,000 pounds water resistant (text) book paper; 800,000 pounds supercalendered book paper; 1,555,000 pounds coated book paper; 1,980,000 pounds mimeograph paper; 420,000 pounds duplicator copy paper; 250,000 pounds U. S. M. O. safety writing paper; 9,045,000 pounds writing paper; 675,000 pounds map paper; 405,000 pounds manifold paper; 2,525,000 pounds bond paper; 660,000 pounds ledger paper; 905,000 pounds index paper; 260,000 pounds cover paper; 240,000 pounds manila paper; 255,000 pounds kraft paper; 350,000 sheets gummed paper; 20,000 pounds blotting paper; 5,000 pounds wallet board; 125,000 pounds tag board; 10,000 pounds manila board; 10,000 sheets railroad board; 220,000 pounds wood cardboard; 70,000 pounds tan board; 5,140,000 pounds postal card paper; 40,000 sheets pressboard; 300,000 pounds newsboard; 80,000 pounds binder's board; 110,000 pounds chestnut cover board.

In cases where more than 1,000 reams are called for, proposals will be received for 1,000 reams or more.

By direction of the Joint Committee on Printing.

JOHN J. DEVINY,
Public Printer.

Washington, D. C.
August 11, 1950 A-31

BUY
U. S. SAVINGS
BONDS

The

MILL & MILL EQUIPMENT NUMBER

of

Paper Trade Journal

will be issued September 7th

This will be the largest Mill Equipment number we've had in years with added circulation and greater editorial content.

If you have anything to buy or sell—this is the issue to tell your story.

Send in your copy no later than Monday, September 4th or wire your reservation.

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We make a specialty of "Ready Dressed" cogs which are READY TO RUN the moment driven and keyed. Write for circular "G" and instruction sheets free.

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The Goodyear Tire & Rubber Company
Monsanto Chemical Co.
National Starch Products, Inc.
Nopco Chemical Co.
Stein, Hall & Co., Inc.

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Appleton Machine Co.
Dilts Machine Works, Inc.
Dorr Company
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Hardinge Company, Inc.
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D. J. Murray Mfg. Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.
Shartle Brothers Machine Co.

ADJUSTABLE SHAKE MOTION
Manchester Machine Co.

ALLOYS
Michigan Steel Casting Co.

ANTIFOAM
American Cyanamid Company Industrial Chemicals Division
National Aluminate Corp.
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BARKERS AND CHIPPERS
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Carthage Machine Co.
D. J. Murray Mfg. Co.
Valley Iron Works Co.

BARS
Dilts Machine Works
E. D. Jones & Sons Co.
The Moore & White Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

BASIC WEIGHT SCALES
Thwing-Albert Instrument Co.

BEARINGS
Black Clawson Company
E. D. Jones & Sons Co.
Link Belt Company
Magnus Metal Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Timken Roller Bearing Co.
Valley Iron Works Co.

BEATERS AND JORDANS
American Paper Machy. & Engrg. Works, Inc.
The Appleton Machine Co.
Black Clawson Company
Dilts Machine Works
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Morden Machines Co.
J. J. Ross Company
Ross Paper Machy. Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

BED PLATES
Bahr Brothers Mfg. Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Farrel-Birmingham Co., Inc.
E. D. Jones & Sons Co.
Lukenweld Div., Lukens Steel Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

BELTING
Alexander Brothers
Allis-Chalmers Mfg. Co.
The Goodyear Tire & Rubber Company
Link Belt Company

BLEACHING AGENTS
E. I. Du Pont De Nemours & Co., Inc.
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Rohm & Haas Co.
Virginia Smelting Co.

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Perkins & Sons, Inc., B. F.
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Niagara Alkali Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

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Carthage Machine Co.
Kalamazoo Tank & Silo Co.
Moore & White Co.
Murray Mfg. Co., D. J.
Walworth Company

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BOTTOMS
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Valley Iron Works Co.

BOXBOARD SCALES
Thwing-Albert Instrument Co.

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BRUSHES
M. W. Jenkins Sons, Inc.

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Testing Machines, Inc.

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Farrel-Birmingham Co., Inc.
Lobdell Co.
Edward J. McBride
The Moore & White Co.
Perkins & Sons, Inc., B. F.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

CARRIER ROPE
Williams-Gray Co.

CASEIN
American Cyanamid Co., Industrial Chem. Div.
Bunge Pulp & Paper Co.
Hercules Powder Co.

CASTINGS
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Black Clawson Company
Babcock & Wilcox Co.
Carthage Machine Co.
Dilts Machine Works
Downingtown Mfg. Co.
Farrel-Birmingham Co.
Hamblett Machine Co.
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Lobdell Co.
Magnus Metal Corp.
Michigan Steel Casting Co.
The Sandy Hill Iron & Brass Works
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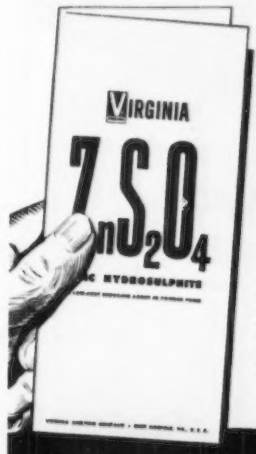

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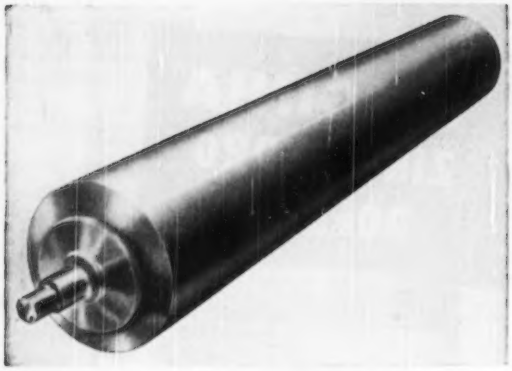

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Ross, J. O., Engrg. Co.
Shartle Brothers Machine Co.

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Link Belt Company

CHEMICAL COTTON PULP
Hercules Powder Co.

CHEMICALS
American Cyanamid Co., Industrial Chem. Div.
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Calco Chemical Co.
Calgon, Inc.
Cowles Chemical Company
Diamond Alkali Co.
Dow Chemical Company
E. I. du Pont de Nemours & Co., Inc.
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Geigy Co., Inc.
Gotesman & Co.
Hercules Powder Co.
Hooker Electrochemical Co.
The Kinsley Chemical Company
Monsanto Chemical Company
National Aluminate Corp.
Niagara Alkali Company
Nopco Chemical Co.
Pittsburgh Plate Glass Co., Columbia Chemical Division
Rohm & Haas Co.
Solvay Sales Corp.
Virginia Smelting Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

CHESTS
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Kalamazoo Tank & Silo Co.
Shartle Bros. Mch. Co.

CHUCKS
Efficiency Engrg. Co.

CLEANING MATERIALS
American Cyanamid Company Industrial Chemicals Division
Cowles Chemical Company
The Dow Chemical Company
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General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Pittsburgh Plate Glass Co.
Solvay Sales Corp.
Wyandotte Chemicals Corp. J. B. Ford Division

CLUTCHES
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Hardinge Company, Inc.
Hudson Sharp Machine Co.
Rodney Hunt Machine Co.
Link Belt Company
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
Shartle Bros. Mch. Co.

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Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Hudson Sharp Machine Co.
The Mayer Machine Co., Inc.
Moore & White Co.
Pordevin Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corporation, John
Weber, Herman G. & Co., Inc.

COATING MATERIALS
American Anode Div.
American Cyanamid Company Industrial Chemicals Division
E. I. Du Pont De Nemours & Co., Inc.
The Goodyear Tire & Rubber Company
Hercules Powder Co.
J. M. Huber Corp.
Monsanto Chemical Company
National Wax Co.
Nopco Chemical Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

COGS
The N. P. Bowsher Co.

COMPLETE FOURDRINIER ROLL GRINDING
Manchester Machine Co.

COMPRESSORS
Allis-Chalmers Mfg. Co.
Nash Engineering Co.
Roots-Connersville Blower Corp.

CONDENSATE FILTERS
Hungerford & Terry, Inc.
The Permutit Company

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Vapo Systems Co.

CONSISTENCY REGULATORS
Askania Regulator Co.
Bird Machine Company
DeZurik Shower Company
Paper & Industrial Appliances

CONSTRUCTION CONTRACTORS
C. M. Guest & Sons

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Black Clawson Company
Dilts Machine Works
Ebasco Services
Frank W. Egan & Co.
Gibbs, Ralph
Alvin H. Johnson & Co., Inc.
Main, Inc., Chas. T.
Roderick O'Donoghue
The Rust Engrg. Co.
Shartle Bros. Mch. Co.
J. E. Sirrine & Co.
John Waldron Corp.
H. G. Weber & Co., Inc.

CONTINUOUS DIGESTER
Paper & Industrial Appliances

CONTROLLERS
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Black Clawson Company
The Brown Instrument Co.

CONTROLS
Askania Regulator Co.
The Bristol Company
The Brown Instrument Co.
Johnson Corp.
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

CONVERTING MACHINERY
John Waldron Corp.
Dilts Machine Works
Hudson-Sharp Machine Co.

CONVEYORS
Black Clawson Company
Industrial Brownhoist Corp.
Link Belt Company
Murray, D. J., Mfg. Co.
Ross Engineering Corp., J. O.
Shartle Brothers Mch. Co.

CORES
Elixman Paper Co.
Rodney Hunt Machine Co.
Smith & Winchester Mfg. Co.
Sonoco Products Co.

CORROSION RESISTANT
Amercoat Corporation

COTTON LINTER
Railway Supply & Mfg. Co.

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E. D. Jones & Sons Co.
Link Belt Company
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Thomas Flexible Coupling Co.
Valley Iron Works
Waldron Corp., John

CRANES
Cleveland Crane & Engrg. Co.
Industrial Brownhoist Corp.
Link Belt Company
Whiting Corp.

CURL TESTER
Thwing-Albert Instrument Co.

CUTTERS
Black Clawson Company
Dilts Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Harris-Seybold Co.
Moore & White Co.
Perkins & Son, Inc., B. F.
The Sandy Hill Iron & Brass Works
The Smith & Winchester Mfg. Co.
Taylor, Stiles & Co.

CYLINDER MOULDS
Manchester Machine Co.

CYLINDERS
M. W. Jenkins Sons, Inc.
National Tube Co.

DAMPENERS
Perkins & Son, Inc., B. F.
Valley Iron Works Co.

DECKLE WEBBING
Williams-Gray Co.

DEFIBRATORS
American Defibrator Co.

DE-INKING
Dilts Machine Works
General Dyestuff Corp.
Kinsley Chemical Co.
Roderick O'Donoghue
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DEINKING CHEMICALS
E. I. Du Pont De Nemours & Co., Inc.
General Dyestuff Corp.
Kinsley Chemical Co.
Monsanto Chemical Company
Nopco Chemical Co.

DE-MINERALIZING EQUIPMENT
Hungerford & Terry, Inc.
The Permutit Company

DEMULSIFIERS
Wyandotte Chemicals Corp., Michigan Alkali Div.

DENSOMETERS
Bunge Pulp & Paper Co.
W. & L. E. Gurley

DESIGN CONSTRUCTION
Ebasco Services

DETERGENTS
American Cyanamid Company Industrial Chemicals Division
Calgon, Inc.
Cowles Chemical Co.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

DEWAXING CHEMICALS
American Cyanamid Company Industrial Chemicals Division
General Dyestuff Corp.
Nopco Chemical Co.

DIFFERENTIAL SCALES
Thwing-Albert Instrument Co.

DIGESTERS
Babcock & Wilcox Co.
Chicago Bridge & Iron Co.
Lukenweid
Pusey & Jones Corp.

DIGESTERS (Continues)
Paper & Industrial Appliances

DIRTEC
Bird Machine Co.

DISPERSING AGENTS
Calgon, Inc.
General Dyestuff Corp.
Monsanto Chemical Company
National Aluminate Corp.
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

DOCTORS
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Black Clawson Company
Downingtown Mfg. Co.
Lobdell Co.
Lodding Engineering Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DOCTOR BLADES
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Lodding Engrg. Corp.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

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Hardinge Company, Inc.
Lukenweld
The Moore & White Co.
Murray Mfg. Co., D. J.
J. J. Ross Company
Red-Ray Mfg. Co., Inc.
Ross Paper Machy. Co.
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Shartle Brothers Machine Co.
Valley Iron Works Co.

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Manchester Machine Co.

DRILLED SUCTION DRUM ROLLS
Manchester Machine Co.

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Bird Machine Co.
Black Clawson Company
Dilts Machine Works
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Farrel-Birmingham Co.
General Electric Company
Gibbs-Brower Company, Inc.
Rodney Hunt Machine Co.
Link Belt Company
Moore & White Co.
Murray, D. J., Mfg. Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Bros. Mch. Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

DRUM WINDERS
Manchester Machine Co.

DRYER DRAINAGE
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DRYER ROLL PYROMETER
Thwing-Albert Instrument Co.

DUSTERS
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E. D. Jones & Son Co.
Moore & White Co.
D. J. Murray Mfg. Co.
John Waldron Corp.

DUSTING BRUSHES
M. W. Jenkins Sons, Inc.

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Ciba Company
E. I. du Pont de Nemours & Co., Inc.
Geigy Co., The
General Dyestuffs Corp.
National Aniline Division, Allied Chemical & Dye Corp.

ELECTRIC HYGROMETER
Thwing-Albert Instrument Co.

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Dilts Machine Works
John Waldron Corp.

EMBOSSING ROLLS
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Gibbs-Brower Company, Inc.
Northern Engraving & Mch. Co
B. F. Perkins & Son, Inc.
John Waldron Corp.

EMULSIFIERS
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Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

ENZYMES
Rohm & Haas Co.
Vanderbilt Co., R. T.

EVAPORATORS
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Swenson Evaporator Co., Div. of Whiting Corp.

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General Electric Co.
B. F. Perkins & Son, Inc.
Ross Engineering Co., J. O.

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Merrick Scale Mfg. Co.
Leeds & Northrup
The Permutit Company

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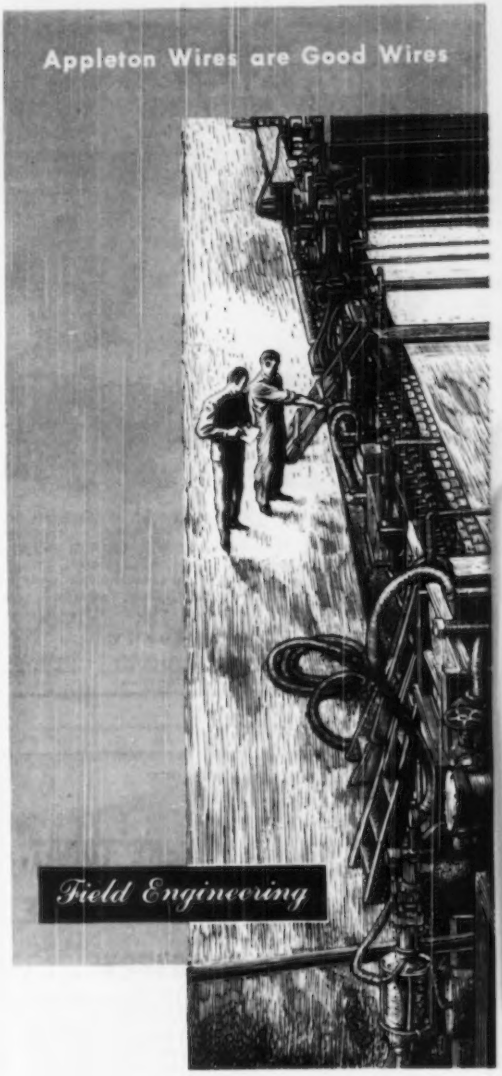
Lockport Felt Co.
Morey Paper Mill Supply Co.
Shuler & Benninghofen
Waterbury Felt Co.
Waterbury, H., & Sons Co.
Williams-Gray Co.



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Waldron Corp., John

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Vanderbilt Co., R. T.
Wyandotte Chemicals Corp., Michigan Alkali Div.

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Walworth Company

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The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

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Valley Iron Works Co.
Westinghouse Electric Corp.

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Carthage Machine Co.
Farrel-Birmingham Co.
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Lobdell Co.
Norton Company
Samuel C. Rogers and Company
The Sandy Hill Iron & Brass Works

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Bound Brook Engrg. Co.
John Waldron Corp.

GUMMING MACHINES
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The Sandy Hill Iron & Brass Works

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Stein-Hall Co., Inc.

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Lukens Steel Company

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Stickle Steam Specialties Co.
Westinghouse Electric Corp.

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General Electric Co.
Leeds & Northrup
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Red Ray Mfg. Co., Inc.
Ross Engineering Corp., J. O.
Stickle Steam Specialties Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

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Nopco Chemical Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

IMPREGNANTS
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W. & L. E. Gurley
National Technical Laboratories
B. F. Perkins & Son
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Taylor Instrument Cos.
Testing Machines, Inc.
Thwing-Albert Instrument Co.

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Shartle Bros. Mch. Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

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DeZurik Shower Company

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Bird Machine Company
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W. & L. E. Gurley
E. D. Jones & Sons Co.
Leeds & Northrup Company
National Technical Laboratories

Taylor Instrument Companies
Testing Machines, Inc.
Valley Iron Works Co.
John Waldron Corp.

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LAMINATING MACHINES
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John Waldron Corp.

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Industrial Brownhoist
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The Wellman Engrg. Co.

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Lobdell Co.
Testing Machines, Inc.

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National Wax Company

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General Electric Company
Reliance Electric & Engrg. Co.

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Canadian Newsprint Supply Co.

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The International Nickel Co.

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Link Belt Company

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Vapo Systems Co.

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Manchester Machine Co.

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Lukenweld
Moore & White Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

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The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

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Thomas W. Hall Co.
Hudson Sharp Machine Co.
Langston Co., Samuel M.

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National Wax Company

PARAFFIN WAX EMULSIONS
Nopco Chemical Co.

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Dilts Machine Wks.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Murray, D. J., Mfg. Co.
Moore & White Co.
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

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F. L. Smidth & Co.

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Allis-Chalmers Mfg. Co.

PETROLATUMS
National Wax Company

pH METERS
Thwing-Albert Instrument Co.

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Babcock & Wilcox Co.
Crane Company
Michigan Steel Casting Co.
National Tube Co.
Walworth Company

PIPE FITTINGS
Armco Drainage & Metal Products, Inc.
Crane Company
Michigan Steel Casting Co.
Walworth Co.

PIPE MARKERS
W. H. Brady Co.

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American Cyanamid Company Industrial Chemicals Division
General Dyestuff Corp.
Monsanto Chemical Company
National Aluminate Corp.
Nopco Chemical Co.
Rohm & Haas Co.

PLASTICIZERS
American Cyanamid Company Industrial Chemicals Division
Aktivin Division, Heyden Chemical Corp.
Nopco Chemical Co.

PLATERS
Gibbs-Brower Company, Inc.
Perkins & Son, Inc., B. F.

PLATES
Armco Steel Corp.
Babcock & Wilcox Co.
J. O. Ross Engrg. Corp.
Lukenweld Division
Lukens Steel Company
Timken Roller Bearing Co.

PLUGS
The Appleton Machine Co.
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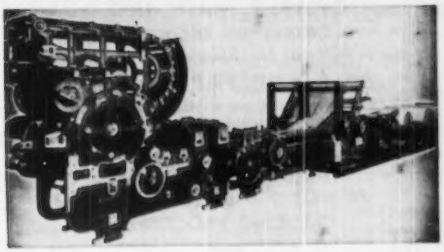

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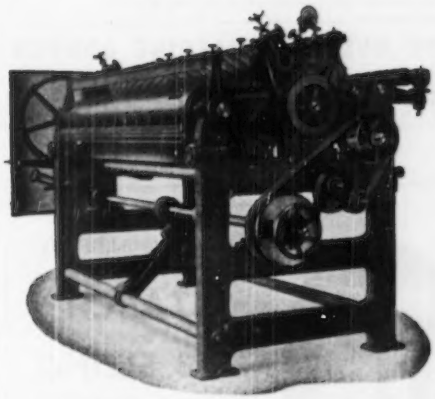

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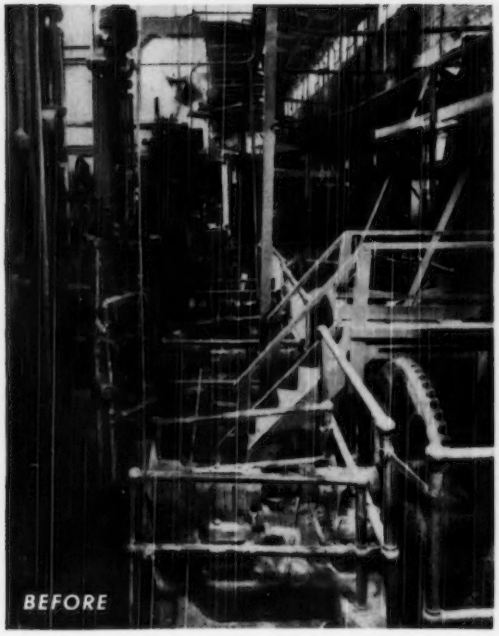

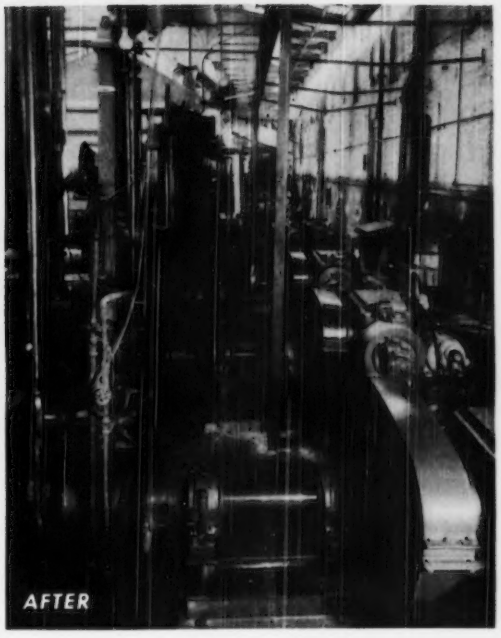

Photographs show a paper making set-up before and after installation of Moore & White Syco Drive. (Name of mill upon request.)

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- ***Sharply reduced maintenance costs***
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- ***Greater cleanliness that will promote good housekeeping***

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